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INDEX OF CONTENTS.

JULY TO DECEMBER, 1926.

(For Special Headings see under Answers to Correspondents; Books; Certificated Plants, etc.; Nursery Notes; Obituary; Plants, New; Societies; and Illustrations.)

A

ABELIA CHINENSIS, 7; A. grandiflora, 289; A. Schumannii, 194
Abercrombie, John, 173, 216
Aberdeen: and its parks, 322; notes from, 72, 192, 373, 508
Aberdeen University, forestry and horticulture at, 363
Abies cephalonica, 408; A. Forrestii, 427
Abol Challenge trophy, award of the, 161
Achillea formosa, 27
Aconitum Wilsonii, 406, 467
Actaea spicata, 406
Aethionema cordifolium, 6
Aethionemas, 446
Afforestation: and birds, 122; development of, in Scotland, 2
Agricultural education in Holland, higher, 282
Agricultural workers, scholarships for, 142
Albert Medal awarded to Prof. Paul Sabatier, 3
Allium giganteum, 106; A. sphaerocephalum var. descendens, 142; A. triquestrum, 269
Allotment holders, international bureau of, 343
Allwood, M. C. (*Carnations for Every Garden and Greenhouse*), 153
Aloe Greenii, 447
Alpine flora, the Scottish, 382
Alpine garden, 6, 46, 67, 87, 106, 128, 146, 167, 186, 206, 226, 247, 267, 286, 306, 326, 346, 366, 386, 406, 428, 446, 469, 489, 509
Alpine plants: fragrant, 357, 386; the protection of, 482
Amaryllis Belladonna, 346, 396, 436
"Amateur Gardening," new editor of, 441
America, notes from, 473
American Gooseberry mildew, 202
American National Arboretum, 42
American Rose Society's awards, 422
Amorphophallus Titanum in flower at Kew, 82
Anarrhinum bellidifolium, 177, 202
Andryala Agardhii, 169
Anemone elongata, 67; A. japonica, 106, 347; A. j. Queen Charlotte, 488; A. Pulsatilla, 426; A. trifolia, 206
Animals, trespass by, 52, 95
Annuals: at Reading, 234; at Regent's Park, 93

Answers to Correspondents:— Alpine plants for a rockery bank facing north, 319; Annual flowers, 159; Antirrhinums diseased, 159; Apple trees and Silver Leaf disease, 220; Apples with brown marks, 340; Ash from wood and paper, 260; Asparagus unhealthy, 60; Aspidistras, to divide, 299; Aster seedlings dying, 159; **Beech** growths dying, 319; Begonia plants failing, 379; Begonias: attacked by thrips, 279; unhealthy, 240; Black spot disease of Roses, 159; Bowling green, treatment of a, 420; Bulbs for forcing, 440; **Cabbage**-root fly, 279; Carnation leaves diseased, 220; Carnations, perpetual-flowering, 299; Celery diseased, 139, 220, 279, 359; Chestnut bark diseased, 340; Chrysanthemum buds failing to open, 399; Chrysanthemums: failing, 499; potash for, 459; rust of, 99, 460; Clematis, mildew on, 220; Compensation under the Agricultural Holdings Act, 159; Conifers from cuttings, 460; Cones of Conifers, to preserve, 299; Crataegus shoots diseased, 399; Cyanide for the control of mealy bug, 180; Cyclamens attacked by a grub, 220; **Daffodil** bulbs eaten by grubs, 180; Daphne Mezereum, 299; Dodder on Gorse, 299; Dry wall garden, 420; **Earth** worms in flower pots, to destroy, 279; Erica ventricosa, 79; **Fig** attacked by a fungus, 199; Fruit trees: removal of, 499; spraying, 460; winter wash for, 240; wire enclosure for, 220; **Gardener's** notice, a, 60, 299; Gerbera Jamesonii, 220; Gloxinia leaves with brown markings, 180; Grapes: failure with Muscat of Alexandria, 79; spot disease of, 60, 379; unsatisfactory, 220; **Horticultural** wages, 299; **Insects** eating Water Lily leaves, 180; Iris rhizomes, holes in, 180; **Kentias**, the propagation of, 19; **Lady** gardener's notice, 399; Land Cress, 220; Laurels and Yews, pruning, 19; Lavender, pruning, 240; Lawns, Plantains in, 79; Lily pond, insects in, 180; Loganberries with grubs, 279; **Mealy** bug: cyanide for the control of, 180; on Peaches, 499; on vines, 459, 499; Melon fruits: disfigured, 79; failing to ripen, 180; with a bitter flavour, 399; Mulberry trees, 480; Mussel scale on Ceanothus shoots, 279; **Narcissi** bulbs infested with grubs, 459; Nectarine fruits disfigured, 180; **Onion**, disease of, 79; **Peach**-leaves blistered, 40; diseased, 99; Peaches: Alexander, 60; mealy bug on, 499; Salway, 19; without flavour, 260; with split stones, 299; Pea plant, the perennial, 180; Peas, mosaic disease of, 79; Pears: diseased, 299; leaf blister of, 420; scabbed, 180; Phlox stems diseased, 139; Plantains on lawns, 79; Plants, ornamental berried, 499; Plum spurs diseased, 19; Plutophos, 459; Pond, weeds in a, 220, 279; Pool for bathing, 79; Potash for vines and Chrysanthemums, 459; Potatos affected by black scab, 180; Pruning: Laurels and Yews, 19; Lavender, 240; **R**.H.S. Hall, size of the, 460; Rock garden epigraph, 379; Rose beetle, the, 159; Rose leaf-eating bees, 199; Roses: black spot disease of, 159; canker in, 220; diseased, 220; for growing in pots, 319; leaves of, damaged, 220; Rust, Chrysanthemum, 460; **Silver** leaf disease and blight on Apple trees, 220; Strawberry plants: affected with spot disease, 260; failing, 299; Sweet Pea with nine flowers on a stem, 199; **Tennis** court: construction of a hard, 359; dressing for a grass, 460; fungus on a, 379; Tobacco, the strongest-flavoured, 220; Tomatos: black rot of, 40; mildew on, 79, diseases of, 99, 159, 220; Trees: for firewood, 459; planted near other gardens, 459; **Vine** border, a raised, 420; Vine: disease of, 260; leaves of, turning yellow, 240; leaves of, with brown spots, 220; with warty growth, 279; Vines: failing, 79, 440; Mealy bug on, 459, 499; potash for, 459; Violet leaf blotch, 460; **Warty** Mimosa leaves, 279; Water Lily leaves eaten by insects, 180; Weeds: in a copse, 79; in a pond, 220, 279; White fly, a parasite of, 120; Winter wash for fruit trees, 240; Wire enclosure for fruit, 220; Worm casts in a lawn, 420

Anthemis sancti-johannis, 270
Antipodean visitors, 242
Antirrhinum bellidifolium, 177, (see p. 202); A. sempervirens, 366
Ants and rats, destruction of, by calcium cyanide, 192
Apiary notes, 52, 107, 192, 295, 433
Apple-canning demonstration, 381
Apple crop: in 1926, the, 455; in France, the cider, 261; the Canadian, 163, 262; the U.S.A., 262
Apple grafted on the Willow, 76, 96
Apple orchards, Nova Scotia, 462
Apples and Pears: in Morayshire, 355; the ornamental effect of certain varieties of, 428
Apples: at the Leeds Chrysanthemum show, 436; highly-coloured 293, 355, 434; in grass land, 476; in 1926, 394; London a poor market for Ontario, 342; raised by the late Mr. Charles Ross, 375, 415; select early, 235; select mid-season and late dessert, 455; the best Empire, 422; the biennial cropping of, 496; the keeping of, 301
Apples, varieties of: Adams's Pearmain, 434; Beauty of Kent, 435; Belle de Pontoise, 335; Ben's Red, 434; Blue Pearmain, 434; Christmas Pearmain, 434; Court Pendu Plat, 435; D'Arcy Spice, 435; Duke of Devonshire, 435; Joy Bells, 476; King Edward VII, 435; Laxton's Superb, 476; London Pippin, 475; Maltster, 434; Mannington's Pearmain, 434; Red Reinette, 434; Rosemary Russet 174; Royal Jubilee, 435; S. T. Wright, 293; White Transparent, 76
Aquarium exhibition, an, 82, 162, 262
Aquilegia viridiflora, 6
Arboretum in America, proposed National, 42
Arctotis breviscapa, 31
Arctostaphlos diversifolia, 71
Argentine republic, fruit farming in the, 342
Armeria Vindictive, 509
Armerias, the taller, 226
Arnott, Mr. S., 142
Arum crinitum, 136
Aster alpinus, 6; A. Thomsonii, 146
Asters: Barr's Pink, 296; Hermann Lons, 363; Lady Coolidge, 443
Astilbes, 446
Astrantia minor, 88, 167
Astridia velutina, 447
Autumn in Covent Garden, 412
Autumn tints, 332, 436, 450, 452
Award of Garden Merit, 461
Azaleas: a new race of hardy, 88; deciduous, 389

B

BAGATELLE ROSE GARDENS, 8, 63
Bagley Wood, Oxford, Conifers at, 142
Bailey, Mr. James, appointment of, 461
Balfour, Sir Isaac Bayley, memorial to the late, 261, 491
Barberry, a new, 42
Barberries, red-fruited, hybrid, 487
Bartholina pectinata, 167
Beans, a glut of, 161
Beetle, the Japanese, in America, 183
Begonia Gloire de Lorraine, 466
Begonias, winter-flowering, 328
Belgian Civil servant's distinction, 462
Belgium, the Apple, Pear and Plum crops in, 82
Berberidopsis corallina, 148
Berberis as an opium antidote, 103
Berberis Thunbergii atropurpurea, 42
Berkheya purpurea, 167
Berlin: a new park for, 402; "Flowers and Fishes" exhibition in, 223
Bermondsey open spaces, 313
Berry, the Himalaya, 215
Bertolonias, 388
Betula alba, 147
Bird sanctuaries in London Parks, 83
Birds and afforestation, 122
Birmingham, new golf course at, 374
Birmingham Parks, new assistant superintendent of the, 103
Blackberry in New Zealand, the, 402, 493
Black Currant Davison's Eight, 275
Bog garden, 6, 67, 146, 226, 446
Boltonia asterioides, 366
Bomarea caldasiana, 28; B. Carderi, 28; B. edulis, 28; B. frondea, 28; B. multiflora, 28; B. patacocensis, 28; B. Salsilla, 28
Bonfires, 482

Books, notices of:—A Diary of an Eighteenth Century Garden (*Dion Clayton Calthrop*), 473; A Garden of Herbs (*Eleanour Sinclair Rohde*), 292; A Handbook of Flowering Shrubs for Gardeners (*R. C. Notcutt*), 193; A Selected List of Hardy Fruits (*R.H.S.*), 222; Botanical Magazine, 61, 262; Carnations for Every Garden and Greenhouse (*M. C. Allwood*), 153; Cotton and its Production (*W. H. Johnson*), 432; Everyman's Book of Garden Flowers (*John Halsham*), 154;

350769

Flowering Plants of South Africa, 401 ; Fruit and its Cultivation (*T. W. Sanders*), 312 ; Geschichte der Gartenkunst (*Marie Luise Gothein*), 210, 233 ; Goldfish Culture for Amateurs (*A. E. Hodge and A. Derman*), 312 ; Lime in Agriculture (*F. E. Corries*), 353 ; Research and the Land (*V. E. Wilkins*), 393, 441 ; R.H.S. Gardeners' Diary for 1927, 462 ; Roses and Their Culture (*S. C. Hubbard*), 354 ; The days of My Life (*Sir H. Rider Haggard*), 332 ; The Flora of South Africa (*Dr. Rudolf Marloth*), 372 ; The Law of Wills for Testators (*G. F. Emery*), 272 ; The New Book of Trees (*Marcus Woodward*), 473 ; The Strawberry (*Samuel Fraser*), 333 ; Tomato Production (*Paul Work*), 354 ; Winter Blossoms from the Outdoor Garden (*A. W. Darnell*), 432
Borgherhout, horticultural exhibition at, 202
Botanic Garden for New Zealand, a national, 143
"Botanical Magazine," 61, 262
Botanist's paradise, twenty days in a, 430, 452
Botrytis and Narcissus, 68
Bougainvillea and Plumbago, hardiness of, 248
Bournemouth, economic plants at, 102
Box Hill domain, addition to the, 103
Bramble, the Nutka Bay, 371
Brassicas, 36
Brasso-Cattleya Mrs. J. Leemann, 447
Brasso - Laelio - Cattleya C. W. Matthes, 287 ; B.-L.-C. The Baroness, 266
Bridgeford, Mr. J. M., 322
Brighton, open spaces at, 302
British Association and the Prince of Wales, 121
British Horticultural Association, 363
British Industries Fair, 421
British Museum : gift to the, 82 ; portrait of Linnaeus for the, 103
Broccoli : All the Year Round, 253 ; autumn, 414
Brodiaea hyacinthina lactea, 46 ; B. ixioides, 87
Brunsvigia Josephinae, 369, 426
Brussels : new central markets in, 402 ; Sweet Pea exhibition in, 22
Brussels Sprouts, 476
Buddleia Forrestii, 489 ; B. Fallowiana, 502 ; B. variabilis, 309 ; B. v. nanhoensis, 266
Bulbocodium vernum, 187
Bulb garden, 46, 69, 87, 106, 126, 146, 187, 206, 268, 326, 346, 386, 406, 426, 446, 509
Bulbs : for cut blooms, 206 ; planting, 396, 456 ; small, for forcing, 207, 276 ; the importation of diseased, 510
Bunyard Silver Cup for a new Apple, 262

C

CABBAGE BUTTERFLIES, 129, 176, 297, 357, 412
Cabbage Mein's No. 1, 155
Cabbages : 215 ; a trial of spring, 15 ; to prevent bolting in, 396, 477
Cacti, the Roland-Gosselin, 362
Calceolaria, 48 ; C. John Innes, 446
Calcium cyanide, destruction of ants and rats by, 192
Calcot Park, Reading, 122
Calderstones Park, Liverpool, 215
Calthrop, Dion Clayton (*A Diary of an Eighteenth Century Garden*), 473
Campanula kewensis, 446 ; C. lactiflora, 468 ; C. l. macrantha, 166 ; C. persicifolia, 467 ; C. pyramidalis alba, 186
Canadian fruit exports, 481
Cannon Hill Park as an open space, 354
Cantuas, 269
Cardamines, 267
Carnations : border, 67, 248 ; new perpetual-flowering, 47, 346 ; old-fashioned border, 36 ; rust on perpetual, 468
Carpenteria californica, 166
Caster oil cultivation in North Africa, 182
Castleford, Monmouthshire, 268
Catalogues, the preservation of trade, 41
Catasetum macrocarpum, 212
Cattleya Brightness, 128 ; C. Cyrus, 306 ; C. Iris, 211
Cauliflowers : 496, 253 ; for pickling, 401
Cayeaux, M. Henri, honour for, 242
Ceanothus Henri Desfossé, 143
Cedar tree, an ancient, 141
Cedrus Libani decidua, 248
Celery, failure of, 477
Celery Fly, 129
Celosia plumosa, 128
Celsia arcturus, 48
Ceratostigma plumbaginioides, 488

Certificated Fruit :— Apple Exquisite, 217

Certificated Plants :—Abelia Schumannii, 57 ; Achimene Dwarf Pink, 137 ; Allium sphaerocephalum var. descendens, 97 (see also p. 142) ; Amarcrinum Howardii, 254 ; Anarrhinum bellidifolium, 177 (see also p. 202) ; Antirrhinum bellidifolium, 177 (see also p. 202) ; Arbutus Menziesii, 337 ; Arctotis breviscapa, 16 ; Asters : Mrs. George Monro, 297 ; Ruby Tips, 254 ; Berberis Thunbergii atropurpurea, 254 ; Biarum eximium, 255 ; Brasso-Cattleya Alderman, var. Mars, 377 ; B.-C. Hannibal, 259 ; B.-C. Jazz, 336 ; B.-C. J. B. Adamson, 336 ; B.-C. Miranda, Low's variety, 297 ; B.-C. Monarch, 336 ; B.-C. Muriel var. Queen Elizabeth, 259 ; B.-C. Rosita, Llewellyn's variety, 456 ; Brasso-Laelia Rex, 377 ; Brasso-Laelio-Cattleya Ambersolis, 337 ; B.-L.-C. Cytheria, 457 ; B.-L.-C. C. W. Matthes, 254 ; B.-L.-C. Elektron, 297 ; B.-L.-C. Flavida, 377 ; B.-L.-C. Helios, 297 ; B.-L.-C. Irma, 217 ; B.-L.-C. Margery, 377 ; B.-L.-C. Mithra, 457 ; B.-L.-C. Salta, 337 ; Campanula Donald Thurston, 57 ; Canna Ensign, 297 ; Carnations : Christine Prior, 59 ; Flamingo, 59 ; Flora McIvor, 60 ; Ida Gray, 60 ; Mrs. Peter Vlasto, 59 ; Royalty, 457 ; Ruby Glow, 337 ; The Favourite, 457 ; Cattleya Adula, Haddon House variety, 278 ; C. Adulosa, 358 ; C. Aeneas var. Rosita, 336 ; C. ardentissima St. Albans var., 297 ; C. Carmencita var. excelsis, 259 ; C. Clive var. Prince of Wales, 259 ; C. Clotho, Rann Lea var., 479 ; C. Dinah, 456; C. Eleanora var. Rex, 336 ; C. Eleanora var. Distinction, 479 ; C. General Maud var. splendens, 254 ; C. Gilvus, 297 ; C. Hardyana var. Flammea, 336 ; C. Illustre var. Cloth of Gold, 336 ; C. John Henry, 297 ; C. Lady Veitch, Rosslyn var., 336 ; C. Lady Veitch var. Mrs. Gratrix, 278 ; C. Lamberhurst var. Lemoniana, 358 ; C. Lorna, 259 ; C. L. var. Empress, 254 ; C. L. var. Exquisita, 336 ; C. Mimosa var. Golden Queen, 254 ; C. Mira var. Danegelt, 278 ; C. Profusion var. The King, 259 ; C. Queen Elizabeth, 278 ; C. suavior var. Aquine, 259 ; C. s. var. compacta, 259 ; C. s. var. excelsa, 259 ; C. Wembley, 178 ; Ceanothus Henri Défosse, 97 (see p. 143) ; Chirita Marcanii, 337 ; Chrysanthemums : alba, 337 ; Aloma, 457, 458 ; Aquitania, 396 ; Atalanta, 337, 358 ; Augusta, 378 ; Autumn Tints, 419 ; Beatrice, 417 ; Carinata, 396 ; Clarice, 457 ; Comus, 358 ; Crimson Conquest, 499 ; Crimson Dawn, 458 ; Erebus, 479 ; Everlasting, 378, 396 ; Fifi, 396 ; Fusilier, 497, 499; Golden Climax, 458 ; Golden Seal, 419 ; Grenadier, 417, 418 ; Guardsman, 458 ; Hon. Margaret Smith, 417 ; Iolanthe, 396 ; Janet Wyber, 255, 258 ; Lady Brunton, 417, 419 ; Lady Finlay, 396 ; Lavinia, 497, 499 ; Madeline, 255,258 ; Marjorie Woolman, 358 ; Miss Dorothy Capp, 419 ; Miss Mary Powell, 396 ; Mrs. H. Dunkets, 396 ; Peerless, 255, 258 ; Red Ensign, 298 ; Red Majestic, 419 ; Richard Holding, 258 ; Rita, 417, 148 ; Ruddigore, 458 ; Scythia, 419 ; Thalia, 378, 396 ; Valerice, 457 ; W. Renshaw, 417, 419 ; Yellow Favourite, 497, 499 ; Yellow Majestic, 396 ; Cirrhopetalum Medusiae var. alba, 437 ; Clerodendron foetidum, 254 ; Codiaeum H. G. Cooper, 417 ; Coelogyne speciosa albens, 336 ; Cosmos White, 178 ; Crinum concinnum, 97 ; Cupressus tamaricifolia, Tilgate variety, 137 ; Cypripedium Ashtonii, Haddon House var., 479 ; C. Athollii, 499 ; C. aurea, 456 ; C. Bendigo, 497 ; C. Bromilowianum, 456 ; C. Earl of Chester var. Lucifer, 278 ; C. Enchantress, Adamson's var., 336 ; C. Irine, 278 ; C. Lord Wolmer var. Ortis, 337 ; C. Marjorie Eaglesfield, 456 ; C. Mildred var. Fantasia, 358 ; C. Mulatto var. splendens, 499 ; C. Nesta, Westonbirt var., 457 ; C. Prince David, 479 ; C. Psyche Mrs. H. Druce Gig, 278 ; C. Sir Alan Cobham, 358 ; C. Swallow, Westonbirt variety, 437; C. T. Abbot, Adamson's var., 259 ; C. The Sheik, 358 ; C. Titan, 479 ; Dahlias : Alice Amos, 399 ; Cheal's Pink, 399 ; Cintra, 399 ; Clara Hart, 399 ; Diophen, 399 ; Evelyn Hancock, 399 ; Gloria, 399 ; Henry B. May, 399 ; Hermia, 399 ; H. J. Jones, 399 ; Jersey Beauty, 399 ; John Mensing, 399 ; Kingcup, 399 ; Lady Aileen, 399 ; Macdonald, 399 ; Mavis, 399 ; Menny Carlee, 399 ; Mrs. A. R. Mountain, 399 ; Mrs. H. C. Scrimgeour, 399 ; Preston, 399 ; Prudence, 399 ; Rose Elegance, 399 ; Secretary Voors, 399 ; Tally Ho, 399 ; Yellow Queen, 399 ; Delphiniums : Lady Edith, 16 ; Orion, 121 ; Deutzia taiwanensis, 57 ; Escallonia Iveyi, 97 ; Eucryphia Nymansay, 177 ; Gentiana detonsa, 297; Gladioli: Abricot, 319 ; Ada, 278 ; Albatross, 319 ; Andenken an Wilhelm Pfitzer, 319 ; Bernard Kuhn, 278 ; Bleriot, 319 ; Blue Bell, 319 ; Camillo Schneider, 278 ; Clio, 278 ; Corypheé, 319 ; Emma, 319 ; Ethelyn, 278 ; Frau Gertrud Pfitzer, 319 ; Golden Gleam, 278 ; Heliosa, 319 ; Jhr. G. F. van Tets, 319 ; Joannita de Castro, 278 ; Kelway's Defiance, 137 ; La Consance, 278 ; La Lys, 278 ; Minerva, 319 ; Mrs. F. C. Peters, 319 ; Mrs. Henry McClaren, 319 ; Mrs. van Konijnenburg, 319 ; Nancy, 319 ; nanus hybrida Bartigon, 319 ; Oranje-Nassau, 319 ; Perle Brilliante, 319 ; Pfitzer's Triumph, 319 ; Phaenomen, 319 ; Pinkie, 278 ; Pour le Merite, 319 ; primulinus Krelage's Favourite, 319 ; p. Red Letter Day, 319 ; Princess Juliana, 319 ; Rev. J. Stubbs, 278 ; Roodkapje, 319 ; Rosary, 319; Salvator Rosa, 319 ; Scarlet Cardinal, 278 ; Seedling No. 27, 319 ; Souvenir, 278 ; Troubadour, 319 ; Vinula, 278 ; Yellow Perfection, 319 ; Yvonne, 319 ; Walter Blom, 278 ; Heeria rosea elegans, 57 ; Hemerocallis Margaret Perry, 57 ; Hydrangea Mrs. H. J. Jones, 16 ; Ilex Fargesii, 297 ; Kniphofia multiflora, 337 ; Laelio-Cattleya Aconagua, 417 ; L.-C. Cantab var. Sunset, 217 ; L.-C. Carmencita var. Mikado, 259 ; L.-C. Fascinator var. Samson, 99 ; L.-C. Hassallii alba var. Evansiae, 259 ; L.-C. Jacquinetta, 176 ; L.-C. Lucretia var. Milly, 57 ; L.-C. Marina, 259 ; L.-C. Minos var. rubra, 337 ; L.-C. Mrs. Ward, 278 ; L.-C. Nancy, 259 ; L.-C. Pamela, 377 ; L.-C. Profusion, Pitt's variety, 278 ; L.-C. P. Stamperland var., 254 ; L.-C. P. var. Suttoniae, 259 ; L.-C. P. var. Titanic, 417 ; L.-C. P., Vestey's var., 259 ; L.-C. Schröderae var. Solum, 358 ; L.-C. Soulange, Rosslyn variety, 278 ; L.-C. S. var. Brilliant, 278 ; L.-C. S. var. Radiant, 358 ; L.-C. St. George, Towneley Grove variety, 259 ; L.-C. St. Gothard var. Lord Renfrew, 259 ; L.-C. Thebes var. Mary Regina, 259 ; L.-C. Urbania var. superbiens, 99; L.-C. Warrior, 259 ; L.-C. Zeno, 337 ; Lavatera splendens Sunset, 178 ; Linum grandiflorum, 121 ; L. g. Blue, 121 ; L. g. rubrum, 121 ; Miltonia Bleuana, Bridge Hall var., 99 ; M. Constance, 99 ; M. C. var. secundus, 139 ; M. Hyeana var. King Ethelwulf, 139 ; M. spectabilis var. extraria, 278 ; M. William Pitt, 259 ; M. William Pitt var. Purple Prince, 278 ; Miltonioda Harwoodii var. Excelsior, 336 ; Montbretias : E. A. Bowles, 177 ; Lord Lambourne, 177 ; Nemophila insignis, 121 ; N. maculata, 121 ; N. m. grandiflora, 121 ; Nymphaea amabilis, 57 ; N. Attraction, 57 ; N. tulipiformis, 57 ; Odontioda Amethyst, Towneley Grove variety, 99 ; O. Bradshawiae var. Phoenix, 99 ; O. Chanticleer var. Brilliant, 99 ; O. Esme, 97 ; O. Hiawatha, 259 ; O. Joiceyi var. Rae, 479 ; O. Norah, 259 ; O. Nubia, 176 ; O. Pamela, Rosslyn var., 336 ; O. Pyrrhus var. Purple Queen, 259 ; Odontoglossum amabile var. King Albert, 99 ; O. Beauté Celeste, Adamson's var., 139 ; O. crispum Challenger, 479 ; O. c. var. Rosalie, 358 ; O. c. Stonehouse var., 479 ; O. c. var. Baron Renfrew, 358 ; O. c. var. Caro, 336 ; O. c. var. Paledon, 456 ;

O. c. var. Titanic, 99; O. c. var. Toy, 456; O. Dusky Prince, 337; O. Eros magnificum, 139; O. Eximillus var. Rex, 456; O. eximium var. Distinction, 99; O. Frank Reader, 417; O. Jasper var. Ruby, 479; O. J. H. Knight, 479; O. Marathon, var. Ruby, 358; O. Margarita, West Point var., 99; O. Mirum var. aureum, 358; O. ornatus var. J. B. Adamson, 99; O. Philomene var. Mauritania, 278; O. Rosina, 259; O. Senlac, 99; O. St. George var. Momus, 336; O. Torenia, Atholl House var., 499; O. Uro-Skinneri alba var. rosefieldense, 479; O. Whiterock 259; Odontonia Nesta, Stamperland var., 497; O. Regina, 217; Oncidioda Brucaea, 99; Ononis fruticosa, 16; **Pansies**: Dan Cochrane, 179; Mrs. Thomas Brown, 179; Phloxes: Annie Laurie, 137; Enchantment, 137; Hon. Mildred Gibbs, 137; Lord Lambourne, 177; Mauve Queen, 177; Mrs. Edwin Beckett, 137; Royal Purple, 96; Vicary's Victory, 137; Phygelius capensis coccinea, 98; Polystichum aculeatum gracillimum, Forms No. 3 and No. 11, 337; Pontederia crassipes var. lanceolata, 16; Potinara La Paz, 176; Rhododendron diaprepes, 16; Roses: Adele Crofton, 96; Bedford Crimson, 37; Billy Boy, 37; Charles P. Kilham, 236; Charming Princess, 96; Chatillon Rose, 418; Cherry, 96; Ellen Poulsen, 418; Everest, 37; Fraicheur, 418; Francois Juranville, 418; Frank Reader, 57; Gwynne Carr, 418; Irish Fireflame, 418; Jack Hobbs, 57; James Ferris, 236; Lady Helen Maglona, 37; Lady Worthington Evans, 96; Lincoln Seedling, 37; Lulu, 418; Mrs. G. A. Wheatcroft, 197; Mrs. Wallis, 418; Old Gold, 418; Patience, 197; Paul's Scarlet Climber, 418; Portadown Yellow, 197; Princess Elizabeth of Greece, 37; Sir D. Davis, 197; Souvenir de Madame Boullet, 418; Ruscus aculeatus, 458; **Salvia** Bluebeard (?), 254; Satyrium coriifolium, 137; Scabiosa anthemifolia rosea, T. Hay's variety, 98; Scolopendrium vulgare sagittatum crispum cristatum, Perry's var., 255; Solidago Ballardii, 254; Sophro-Laelio-Cattleya Anzac var. Suvla, 336; S.-L.-C. de Vere Beauclerc, 259; S.-L.-C. Isabella, 278, 259; S.-L.-C. Prudence, 97; Sphaeralcea Fendleri var. Hascombe Orange, 137; Sweet Peas: Carmelita, 49; Daventry, 132; Firebrand, 132; Lilac Queen, 132; Model White, 132; Mrs. A. Searls, 49; Red Gauntlet, 132; Robin Hinton, 203; Ruddigore, 203; Violet, 132; **Tritonia** hyalina, 57, 87; T. Lyalina (see T. hyalina), 57; **Vanda** caerulea Adamson's var., 358; Violas: D. Stevenson, 179; Fereneze, 179; Mary Raeburn, 179; May Gray, 179; Milton Beauty, 179; Mrs. Jack Bell, 179; Peggy Tennant, 179; Rita Cochrane, 179; **Vuylstekeara** Merola, 497; V. Gratrixiae, 278; **Wallflower**, double-flowering annual, 16.

Certificated Vegetables:—Cabbages: Cotswold Queen, 418; Primo, 418; Roode Nunhemmer, 418; Vesuvius Pickling, 418; Wheeler's Imperial, 418; **Kohl Rabi**: Delicatesse, 278; Earliest White, 278; Early Vienna White, 278; **Peas**: Admiral Beatty, 358; Alderman, 358; Duke of York, 358; International, 358; Melting Marrow, 358; Zenith, 358; Potatos: Field Marshal, 458; Irish King, 458; Up-to-Date, 458.

Certificates for market plants and flowers, 241
Cestrum, 188
Chamberlain, Joseph, as a garden designer, 81
Charieis heterophylla, 6
Cheiranthus scaber, 168
Chelsea show, 21; in 1927, 201; scientific exhibits at, 236
Cherry Governor Wood Bigarreau, 96
Cherry, the Hill, of Japan, 331
Cherry pie, a monster, 182
Cherries of Japan, the flowering 331, 402, 409
Chimaphila maculata, 489
Chirita Marcanii, 353
Christmas trees, Holly and Mistleto, 461
Chrysanthemum maximum Robinsonii, 246
Chrysanthemums, 108; Anemone single, 446; at Miller Park, Preston, 483; at Rouen, 422; dwarf, 274; at Southport, 503; in colour, 462; in the London parks, 323, 454; in Victoria Park, London, 454; in the Southend parks, 433; raising of cuttings of, 468; some old-time, 326, 376, 414
Cimicifuga simplex, 408, 467
Cineraria lobata, 148
Cintra-Monserrate, 330
Cistus Silver Pink, 67
Claremont, Esher, sale of, 142
Clarkias: for winter decoration, 109 spring sowing of, 388
Classical and legendary gardens; 30, 90, 150, 350, 390, 470
Clayton, Mr. E., 242
Claytonia australasica, 509
Clematis aromatica, 249; C. grata, 309; C. integrifolia, 267, 406
Cleome pungens, 406
Clerodendron Thomsonae, 67, 266
Clianthus puniceus magnificus, 66
Clivia miniata, 8
Clusius, memorial to, 342
Cockayne, Dr. L., 222
Codonopsis ovata, 128
Coelogyne, 86, 148
Collomia coccinea, 147
Columbines, some new, 467
Conference on flower and fruit sterility, international, 94
Conifers: at Bagley Wood, Oxford, 142; dwarf, for the rock garden, 243
Convolvulus mauritanicus, 206
Copenhagen Municipal Gardens, 311
Cordyline Banksii, 71
Coronilla cappadocica, 446
Cordylines: at Torquay, 3; flowering in Scotland, 29
Coreopsis grandiflora, Perry's Double, 147; C. verticillata, 127
Corokea macrocarpa, 66
Corries, F. E. (*Lime in Agriculture*), 353
Corry, Mr. W. Longman, 42
Corydalis cheilanthifolia, 469; C. vesicaria, 169
Cotson, Mr. T., 202
Covent Garden Market: autumn in, 412; proposed removal of, 282, 441, 463; through Austrian eyes, 83
Cows poisoned by fruit spray, 82
Crambe cordifolia, 28
Crassulas, 28
Creighton, Mr. Archibald, 462
Crinums, hardy, 126
Crockatt, Mr. G., presentation to, 482
Crocus Fleischeri, 406
Crocuses: autumn-flowering, 326; November, 451
Cropping in Scotland, double, 303
Crops, condition of the, 22
Cuthbertson, Mr. Wm., 121; honour for, 322
Cyananthus Delavayi, 352
Cyanogas, uniformity in composition of, 93
Cyclamen, 128; C. africanum, 249
Cypella Herbertii, 187
Cypressus, the swamp, 70
Cypripedium guttatum, 429; C. Memoria H. S. Leon, 466; C. niveum and its hybrids, 407
Cytisus Ardoinii, 46; C. Reverchonii, 7

D

Daffodil Fly, the, 506
Daffodil seedling, life history of a, 488
Daffodils naturalised in grass, 321
Dahlia Coltness Gem, 226
Dahlias, 155, 194, 367; as market blooms, 402; for trial at Wisley, 292
Daphne Cneorum, 406
Darmstadt, new public garden in, 402
Darnell, A. W. (*Winter Blossoms from the Outdoor Garden*), 432
Delhi, gardening and afforestation at, 41
Delphinium Pannonia, 286
Delphiniums, autumn, 346
Dendrobium atroviolaceum, 372; D. Dearei, 372; D. pendulum, 109; D. Thwaitesiae, 141, 148
Derbyshire, trees and forestry in, 69
Derham, A. (*Goldfish Culture for Amateurs*), 312
Derris, 342
Deutzia crenata magnifica, 66
Dianthus petraeus, 489; D. superbus, 6; D. Wolley Dod, 406
Dicentra spectabilis, 306
Dipladenia boliviensis, 353
Disas, evergreen, 47
Dome Gardens, Brighton, 361
Doncaster, drainage and mining around, 42
Douglas, David, 250
Downy mildew of the vine again in England, 448
Drainage and mining around Doncaster, 42
Dresden: new park for, 282; Flower Show, 142; the closing of the International exhibition at, 261
Duke's Meadows, Chiswick, proposed generating station on the, 354
Du Pont, Mr. Pierre, awarded the White Medal, 182
Dutch emigrants for Canada, 443
Dyes, African vegetable, 61

E

East Malling Research Station, 161
Echinacea purpurea var. The King, 246
Economic plants: at Bournemouth, 102; in the Forbury Gardens, Reading, 182
Edinburgh, notes from, 91, 208, 329
Edinburgh Royal Botanic Garden Guild, 221; "Journal" of the, 203
Eichhornia crassipes, 86
Electric heating in the garden, 402
Elm, the Moline, 503
Emery, G. F. (*The Law of Wills for Testators*), 272
Enkianthus, 349, 472
Entomology, the progress of economic, 453, 474, 492
Eomecon chionantha, 247
Eremuri, some beautiful hybrid, 88
Erepsia tuberculata, 150
Erica australis, 29; E. mediterranea, 389
Erigeron Quakeress, 127
Erysimum linifolium, 6
Escallonia C. F. Ball, 76; E. montevidensis, 267, 309
Estates in the market, 322
Eucomis punctata, 406
Eucryphia pinnatifolia, 166
Eustoma Russellianus, 352
Evergreen shrubs for walls, 209
Exhibition of plants at Chiswick in 1848, 492

F

Fabiana imbricata, 7
Fences, road-side, 472
Fernery, the, 27, 247, 328
Fern, extermination of the Parsley, in Wales, 2
Fern-lover's greenhouse, a, 328
Ferns: hardy, for shady situations, 27; the investigation of, 3
Ficus macrophylla, 67
Figs, select varieties of, 335
Film-actor-gardener, death of a famous, 162
Fires caused by railway and other engines, 370
Fish as manure, 253
Florists' flowers, 29, 108, 166, 248, 274, 326, 346, 367, 446, 468
Florists' Telegraph Delivery Association in Scotland, 22
Flower garden, 4, 24, 44, 64, 84, 104, 124, 144, 164, 185, 204, 224, 244, 264, 284, 304, 324, 344, 364, 384, 404, 424, 444, 464, 484
"Flowering Plants of South Africa," 401
Flower market in Vienna, a new, 462
Flowers: at Hampton Court, in August, 208; in season, 241; of waning summer, 210; the fragrance of, 81; the retailing of, 62; winter, 488
Forbury Gardens, Reading, economic plants in the, 182
Foreign correspondence, 56
Forest fires in France, serious, 162, 182
Forest playground in the Lake country, 3
Forestry: 32, 68, 288; development of, in Scotland, 81, 102; and horticulture at Aberdeen University, 363; Government grant for, 122; the neglect of British, 288
Forsythia, 427; F. ovata, 349
Fragrance of flowers, the, 81
France: a new public park for, 82; imported labour in, 410; serious forest fires, in, 162, 182
Fraser, Samuel (*The Strawberry*), 333
Fream Memorial prize, award of the, 2
French Chrysanthemum Congress at Blois, 62, 463
French Gardeners' Association, 422
French Horticultural Congresses, in 1927, 242
Fritillaria nobilis, 326
Fruit crops: in the Netherlands, 122; judged from the blossom and weather in spring, 8; remarks on the condition of the, 133, 154, 173, 193, 214, 234, 252, 276, 294, 314, 335, 355, 375; summaries of the hardy, 111, 112, 113, 114, 115, 116, 117; the hardy, 101; the Scottish, 63
Fruit exports, Canadian, 481
Fruit farming in the Argentine republic, 342

Fruit garden: the hardy, 4, 24, 44, 65, 84, 104, 124, 144, 164, 184, 204, 224, 244, 264, 284, 304, 324, 344, 364, 384, 404, 424, 444, 464, 484; the market, 53, 132, 213, 314, 394, 493
Fruit, gift of, to the Lord Mayor of London, 282
Fruit pickers, strike of, 242
Fruit register, 76, 96, 174, 215, 235, 275, 293, 335, 355, 375, 415, 434, 455, 475
Fruit trees: and lime, 510; care of young, 434; on pruning, 241; the manuring of, 1, 321
Fruits: bush, 314; competition for canned, 82; the best hardy, 222; the most popular, 263; under glass, 4, 24, 44, 64, 84, 104, 124, 144, 165, 184, 204, 225, 244, 264, 284, 304, 324, 344, 364, 385, 405, 425, 444, 464, 484
Fuchsia serratifolia, 429, 483
Fuchsias, 29
Fuel: for glasshouses, 361; from the country-side, 383; shortage of, in gardens, 436
Fulham Palace Gardens, 136
Fungi, book on edible and poisonous British, 142
Funkia Dr. Thos. Hogg, 267

G

GARDEN AS A PRESENT, A, 203
"Gardeners' Chronicle" medals, winners of, in 1926, 501
"Gardeners' Chronicle" seventy-five years ago, 3, 23, 43, 63, 83, 103, 123, 143, 163, 183, 203, 223, 243, 263, 283, 303, 323, 343, 363, 383, 403, 423, 443, 463, 483, 503
Garden hedges, 472
Garden notes from south-west Scotland, 50, 90, 151, 208, 268, 308, 352, 431, 470
Garden, the October, 381
Garden tools and appliances on sale or return, 272
Gardeners, legacies to, 103, 141, 162, 341, 423
Gardening lectures in north London, 203
Gardens, classical and legendary, 30, 90, 150, 350, 390, 470
Garinish Island, co. Kerry, 110
Gaultheria Veitchiana, 202
Genista radiata, 47; G. saggitalis, 509
Gentiana acaulis, 296; G. dentonsa, 326 (see p. 379); G. Froelichii, 247; G. prolata, 247; G. sikkimensis, 247; G. stragulata, 247
Gentian, the Willow, 386
Gentians, some of the newer, 247
Geranium Lowei, 386; G. phaeum, 206
Gerard, Prof., retirement of, 63
German nurseryman's twenty-five years' service, 383
Germination, the effect of lead and other metals on, 341
Geum Fire Opal, 147
Geums as pot plants, 429
Ghent. Rose Show, 122
Gilchrist, Mr. James A. awarded the Fream Memorial Prize, 2
Gilia californica, 11
Gillenia trifoliata, 206
Gladioli: a note on, 509; Langprim, 216
Gladiolus primulinus, hybrids of, 267, 357
Gladiolus at Burton-on-Trent, 42
Gladstone, the late Sir John, tribute to, 261
Glasgow's new parks, 294
Glasnevin, notes from, 71, 168, 249, 352, 451
Golf course at Cocks Moors Wood, Birmingham, new, 374
Gooseberry caterpillars, 152
Gooseberry mildew, American, 202
Gooseberry, the die-back disease of, 434, 477
Gooseberry Warrington, 174
Gooseberries, 253; and Currants, 434; late, 194
Gothein, Marie Luise (*Geschichte der Gartenkunst*), 210, 233
Grapes: a large bunch of, 323; scalding in, 55
Grass land, the intensive cultivation of, 201
Green herbage for sun-baked banks, 167
Greenhouse: a Fleet Street, 62; how to determine the cubical contents of a, 82
Greenhouses and tool-sheds, 152
Guano, Peruvian, 223
Guernsey, horticulture in the Island of, 348, 368
Guildford Castle and Pleasure Gardens, 334
Gum, Kauri, 142
Gypsophilas for the rockery, 46

H

HAGGARD, SIR H. RIDER (*The Days of My Life*), 332
Hail storm in North Devon, severe, 63
Hales, Mr. W., 302
Hall, Mr. John O., 502
Hall, Sir Daniel, appointment of, 121
Halsham, John, (*Everyman's Book of Garden Flowers*), 154
Hampton Court surroundings, beautifying, 341
Hampton Court Gardens, 82; August flowers at, 208; increased fees for admission to, 81
Handsworth Nurseries, Royal visit to the, 442
Hardy flower border, 6, 27, 46, 67, 88, 106, 166, 186, 206, 246, 267, 286, 307, 328, 347, 366, 386, 406, 426, 446, 467, 488
Hardy herbaceous plant, what constitutes a? 234
Harrison, Mr. and Mrs. John, diamond wedding of, 363
Harrogate, purchase of land at, for the public, 475
Haverholme Priory, 361
Heaths: late-flowering, 289; the Irish, 232, 297
Hebe, the genus, 462
Hedge-clipper, a mechanical, 60
Hedges, garden, 472
Hedysarum coronarium, 166; H. multijugum, 66
Heeria elegans, 287
Heleniums: Crimson Beauty, 366; Madame Canivet, 246
Helianthemum alyssoides, 428
Helichrysum bellidioides, 67; H. frigidum, 489
Hemerocallis: 126, 186; H. E. A. Bowles, 127; H. Margaret Perry, 126
Henry Eckford Memorial Medal, 1926, award of the, 322
Heracleum giganteum, 489
Heuchera tiarelloides alba, 147
Hibiscus syriacus, 289
Hill, Capt. A. W., honour for, 23
Hillsborough Castle, trees at, 188
Hippocrepis comosa, 509
Hodge, A. E. (*Goldfish Culture for Amateurs*), 312
Holland County Potato show, 23
Holland: higher agricultural education in, 282; seed-testing in, 242
Holm, Mr. Alex, presentation to, 162
Horticultural and Agricultural Organisers' Conferences, 362
Horticultural Congresses, International Committee for, 402
Horticultural continuation classes in Germany, 81
Horticultural exhibition at Borgherhout, 202
Horticultural Produce (Sales on Commission) Bill, 61
Horticulture in the Island of Guernsey, 348, 368
Hubbard, S. C. (*Roses and their Culture*), 354
Hydrangea, a fine, 236
Hydrangeas at Southport, 101
Hyeres: College of Agriculture at, 423; Horticultural College at, 243
Hypericum patulum Forrestii, 148; H. reptans, 186, 226
Hypericums, shrubbery, 372

I

IMPATIENS SULTANII, 388
"Index Kewensis" 422
Indigofera Gerardiana, 132
Indoor plants, 8, 28, 48, 67, 109, 128, 188, 227, 248, 266, 287, 306, 328, 353, 372, 388, 408, 429, 447, 466, 486, 503
Inula ensifolia, 186
Inventions, new horticultural, 180, 299, 400, 479
Iris Flammenschwert, 469; I. ochroleuca, 13
Iris garden, 13, 226, 307, 426, 469
Iris Society's "Bulletin," 62
Irises: Dutch, 307; inexpensive bearded, 226; Japanese, 307; Regelio-Cyclus, 307; the best bearded for Canada, 426
Isbell, Mr. W., presentation to, 142
Isoloma hirsutum, 248

J

JACARANDA MIMOSAEFOLIA, 306, 372, 456
Jamesia americana, 7
Jekyll, Miss Gertrude, 462
John Innes Institute, new Director of the, 121
Johnson, W. H. (*Cotton and its Production*), 432
Jones-Bateman Cup, the, 302
"Journal of Experimental Biology," 42

K

KAURI GUM, 142
Keighley Parks, new superintendent of the, 461
Kew Gardens: Amorphophallus Titanum in flower at, 82; coloured postcards of, 143; notes from, 131, 268, 329, 374; Roses at, 207
Kew Guild annual meeting, 102
Kirengeshoma palmata, 146
Kitchen garden, 4, 24, 44, 65, 84, 104, 124, 144, 164, 184, 204, 224, 244, 264, 284, 304, 324, 344, 364, 384, 404, 424, 444, 464, 484, 504; crops in the, 1926, 455
Knole Park, proposed road through, 341
Kohl-Rabi, 414

L

LAELIA ANCEPS, 486; L. pumila, 328
Laelio-Cattleya Champagne, 266; L.-C. Lustre and its varieties and hybrids, 28; L.-C. Navajo, Low's variety, 211
Lagerstroemia indica, 352
Lakes and pools, artificial, 353
Lathyrus pubescens, 27
Lathyrus, the bushy perennial, 307
Lavatera trimestris, 67
Lavender, a vegetable in law, 282
Law Notes:—Contravention of the Seed Act, 60; Liability for damage by trees, 15; Seed Potato prosecution, 60
Legacies to gardeners, 103, 141, 162, 341, 423
Leicester's new cemetery, 262
Leignitz, exhibition at, in 1927, 462
Leonotis Leonorus, 372
Leontopodium alpinum, 428
Leucojum autumnale, 146
Levasasseur, M. Lucien, 262
Lewisia Tweedyi, 286
Lilies: and lime, 490; in October, 326; in the United States, 251
Lilium Duchartrei, 169; L. giganteum, 126; L. Henryi, 146; L. longiflorum, 227; L. philippinense var. formosanum, 190, 253; L. regale, 126; L. sulphureum, 249
Limoges, Horticultural Congress at, 63
Linnaeus, portrait of, for the British Museum, 103
Linnean Society's library, 442
Linum arboreum, 246
Liriodendron tulipifera, 132
Lithospermum Froebelii, 66
Littlehampton and District Horticultural Society's show in 1927, 243
Lobelia Huntsman, 186
London, a new park for south-east, 82
London gardens exhibition, 201
London railway gardens, 61
Luculia gratissima, 408; L. Pinceana, 408; L. Pinceana flowering in the open at Tresco, 461
Lupinus Paynei, 186
Lychnis Viscaria, 27
Lyon, Mr. James, presentation to, 461
Lyons, plea for a Rose garden at, 281
Lythrums, 146

M

MACMILLAN, MR. HUGH F., 422
Magnolia macrophylla, 7
Mammoth Cave, Kentucky, 63
Manchester Corporation and forestry, 163
Mandevilla suaveolens, 287
Margyricarpus setosus, 428
Marine Park, South Shields, 274
Market nurseries, amalgamation of two well-known, 361
Market plants and flowers, certificates for, 241
Marloth, Dr. Rudolf (*The Flora of South Africa,*) 372
Maurandya Barclayana, 266, 353
Meconopsis integrifolia, 106; M. quintuplinervia, 11
Medals for long service, 323
Medallists, original Victoria, 121
Melons, Cantaloup and Water, 296
Mertensia pulmonarioides and M. sibirica, 426
Mesembryanthemum, 9, 35, 72, 89, 149, 212, 228
Michaelmas Daisies, 315
Michaelstowe Hall, Harwich, 232
Millwater, Ripley, Surrey, 50
Mimulus, a new hardy, 468
Moanalua estate and gardens, Honolulu, 92
Modiola geranioides, 346
Monarda didyma, 107
Monkey's nest in a bunch of Bananas, 203
Montbretias, 246; in woodland, 229
Moore Medal for the best Cypripedium of the year, 481
Moore, Mr. H. J., 2
Morina, 88; M. longifolia, 426
Morisia hypogaea, 386
Morrison, Mr. William, 103, 282
Moschosma riparium, 429
"Mothers' Day" in Belgium, 283
Motors and machinery, the economical upkeep and repair of, 392
Mowers in Vienna, English motor lawn, 443
Mulberry tree: a centuries old, 322; Shakespeare's, 361
Myosotis Welwitschii, 67

N

NAMUR, HORTICULTURAL EXHIBITION AT, 202, 223
Narcissus and Botrytis, 68
Narcissus bulbs, American restrictions on the importation of, 83
Narcissus eelworm, the control of, 282
National Diploma in Horticulture awards, 22
National Gladiolus show, 1927, 303
National Institute of Agricultural Botany, the, 461
National Playing Fields Association, a new branch of the, 443
National Rose Society's shows in 1927, 323
National Sweet Pea Society, 2, 482
Nerines, 188, 488
Nesaea verticillata, 307
Netherlands, fruit crops in the, 122
New York, British delegates to the International Conference at, 122
New Zealand Alpine and Rock Garden Society, 334
New Zealand: a national botanic garden for, 143; the conservation of plants at Wellington, 62
Nicotiana Sanderae and N. suaveolens, 8
Nomblot, M. Alfred, 382
Northern Gardeners, weekly calendar for, 5, 25, 45, 64, 85, 105, 125, 145, 165, 185, 205, 225, 245, 265, 285, 305, 325, 345, 365, 385, 405, 425, 445, 465, 485
Norwood Grove opened to the public, 433
Notcutt, R. C. (*A Handbook of Flowering Trees and Shrubs for Gardeners*), 193
Notospartium Carmichaeliae, 47
Nova Scotia Apple orchards, 462
Nurnburgh, new parks for, 423
Nursery employee, presentation to a, 162
Nursery, local value of a, 403

Nursery Notes:— **Blackmore** and Langdon, 273; **Cheal** and Sons, J., 295; Cypher and Sons, J., 75; **Dickson** and Sons, Alex., 393; **Hemsley**, H., 312; **Oliver** and Hunter, 433; **Sutton** and Sons, 234
Nursery taxation in Austria, 463
Nut weevil, 314

O

OAK: AN EPIDEMIC DISEASE OF THE, 106, 423; the "Doodle," 43

Obituary:—**Aggett**, W. H., 199; Atkins, Edward, 439; **Baxter**, Andrew, 219; Beaucantin, Raoul, 78; Beckett, G. H., 78; Benary, John, 99; **Clarke**, James, 479; Cormick, Alex., 319; **Diguet**, Leon, 259; **Fellows**, Mrs. Hamilton, 139; Forrest, R. W. L., 179; **Gladstone**, Sir John R., 19; **Harvey**, George, 459; Holford, Lt.-Col. Sir George, 240; **Johns**, William H., 419; Joy, Mrs. H., 139; **Kinggett**, Richard, 240; **Minns**, G., 419; **Noble**, Andrew, 439; **Oclee**, H. G., 259; **Page**, F. H., 459; Pemberton, Rev. J. H., 99; **Ross**, Joseph, 99; Ross, Sir John, 78; Ruck, Henry, 139; **Sanders**, T. W., 339; Slocock, Walter C., 199; Smet, Arthur de, 379; Spinks, William, 359; Stokoe, W. R., 459; **Vert**, Frederick J., 78; Vidal, Dr. Emile, 339; Viger, M. Albert, 78; Vincent, Junr., Richard, 359; Vivian, Sir Arthur Pendarves, 179; **Wallace**, W., 139; Webster, Jabez, 439; White, Winifred Blair, 179; Windle, Thomas H., 359; Wood, Chas. Henry, 419; Woolman, Harry, 439
Odontoglossum crispum var. Mrs. Stanley Baldwin, 128
Odontoglossums, 306
Oenothera trichocalyx, 366
Oldham, a new park for, 82
Olearia insignis, 88
Onoclea germanica, 246
Orchid houses, 4, 24, 64, 84, 104, 124, 144, 164, 185, 204, 224, 244, 264, 284, 304, 324, 344, 364, 384, 404, 424, 444, 464, 484, 504
Orchid notes and gleanings, 28, 47, 86, 109, 128, 148, 167, 187, 211, 266, 287, 306, 328, 372, 407, 429, 447, 466, 486
Orchids: insect pests of, 86; new hybrid, 47, 167, 266, 353, 429, 486; the Westonbirt, 441
Origanum hybridum, 306
Ormskirk Potato trials, 1
Orphans, help for gardeners', 241
Ourisia coccinea, 226, 306, 446
Oxalis cernua, 328; O. lobata, 406; O. magellanica, 71
Oxford, open spaces in, 123
Oxycoccus macrocarpus, 446

P

PAEONY EXHIBITION IN HOLLAND, 3
Pallett, Mr. George T., 422
Pancratiums, the hardy, 386
Papain, 482
Papaver pilosum, 286; P. pilosum hybridum, 336; P. triniaefolium, 46
Paradiseas, 346
Paris: Flower Market, Monday closing of, 283; Horticultural exhibitions in, 421; Municipal nurseries of, 341
Park gardeners' outing, 222
Parks and gardens, public, 56, 93, 108, 154, 175, 215, 252, 274, 281, 294, 313, 334, 354, 374, 413, 433, 454, 475, 496
Parks, new, for Nurnburg, 423
Parnassia palustris, 146
Parochetus communis, 46, 128
Parsley, 118
Parsley Fern in Wales, extermination of the, 2
Partridges and Potato crops, 203
Passiflora racemosa and P. Watsoniana, 486
Peach and vine mildews, 477
Peach borders, 414
Peach Barrington, 235
Peaches damaged by ladybirds, 174
Pear "Conference" in America, 343
Pear trees of Vitry, the, 361
Pears: Passe Colmar, 415; Sir Harry Veitch, 375; Triomphe de Vienne, 174; Van Mons Leon Leclerc, 415; Thompson's, 96, 475, 496
Pears, an "eye" rot of, 375
Peckham Rye Park, 413
Pentstemon campanulatus, 186; P. cordifolius, 168; P. Davidsonii, 406; P. gentianoides, 336, 396
Periploca graeca, fruiting of, 422, 487
Perowskia atriplicifolia, 487
Phlox canadensis var. Laphamii, 509; P. Douglasii, 206
Phormium tenax, 387
Phytelephas macrocarpa, 242
Phyteuma comosum, 146
Picea Breweriana, 389; P. rubra, 505; P. sitchensis, 471
Pineapple plantation near Honolulu, 51
Pinks, some old-time garden, 468
Pistacia Terebinthus, 249
Plant Breeding Society, Scottish, 123
Plant integration, 221
Plant names, the pronunciation of, 216
Plants: common names of, 443; neglected, 12; some experiences in acclimatising, 310; sowing seeds of hardy, 46; that should not be disturbed as seedlings, 446; the conservation of New Zealand, at Wellington, 62; the nervous mechanism of, 41; under glass, 5, 25, 45, 65, 85, 104, 125, 145, 165, 184, 205, 225, 245, 265, 285, 305, 325, 345, 365, 385, 405, 425, 445, 465, 485, 504

Plants new or noteworthy:—**Anthemis** sancti-johannis, 270; Arctotis breviscarpa, 31; Astridia velutina, 447; **Buddleia** Forrestii, 489, 502; B. Fallowiana, 502; **Cedrus** Libani decidua, 248; **Erepsia** tuberculata, 150; **Gilia** californica, 11; **Meconopsis** quintuplinervia, 11; **Oenothera** trichocalyx, 366; **Sabbatia** campestris, 107; **Trichostema** lanatum, 107
Platyclinis filiformis, 187
Platycodon grandiflorum, 169
Playing fields: for London children, 1; survey of London's, 442
Plumbago rosea, 486
Plums: a selection of dessert, 118; late, 314; two crops of, 357, 414, 436
Plums: Isabella, 174; Jefferson, 293; Jodoigne Green Gage, 355; President, 415; Transparent Gage, 475
Poison gas for the control of insect pests, 322
Poisonous plants on the farm, 461
Poisons and Pharmacy Acts, 142
Polyanthuses of a century ago, 390
Polygala Chamaebuxus angustifolia, 88
Polygonum cymosum, 147
Pontederia cordata, 249
Potato blight, 2; in Scotland, 242
Potato crop, the, 161, 381, 462; and partridges, 203; in Scotland, 183, 401
Potato: cultural problems of the, 296; black-leg disease of the, 495; haulms of, 336; intervarietal differences in the, 13, 32, 54, 73, 95, 108, 134
Potato week, a, 462
Potatos: certified stocks of, in Scotland, 422; early, 8, 510; flavour in, 297, 336; for heavy land, 236; King Edward, and slugs, 336, 396, 436, 477; Scotch trials of, 101; Ormskirk trials of, 1; yields of, 194
Potentilla, 232; P. atrosanguinea 28; P. formosa, 306; P. rupestris, 128
Poterium, 286, 307
Primroses, the double Evening, 386
Primula farinosa, 376; P. Franchetii, 386; P. Mooreana, 87; P. Palinuri, 87; P. pulverulenta, the Bartley Strain of, 309
Primula, new Tibetan species of, 10
Prince of Wales and the British Association, 121
Proustia pyrifolia, 352
Pruning fruit trees, 241
Pruning, summer, 53, 55
Publications received, 23, 42, 123, 203, 263, 283, 303, 343, 383, 403, 423, 443, 463, 483
Pulmonaria rubra, 426
Pycnostachys Dawei, 287
Pyracantha Gibbsii, 389

Q

QUERCUS CERRIS, 332

R

RADIO AND ROSES IN HOLLAND, 323
Rainfall at Mill Hill during November, 462
Rain, forecasting, 222
Ramondias, 128
Ranunculus asiaticus, 221; R. Lyallii, 407
Raspberries: Hornet, 118; Lloyd George, 118; Park Lane, 118; Pyne's Royal, 118; Royal, 118; Superlative, 118; The Devon, 118
Recreation ground at Whyteleaf, Surrey, new, 102
Red spider, the control of, 333
Regel's "Gartenflora," 42
Regent's Park, annuals at, 93
Research and the land, 441
Rhipsalis warmingiana, 466
Rhodochiton volubile, 266
Rhododendron arboreum in Ceylon, 289; R. azaleoides, 148; R. chasmanthoides, 209; R. fragrantissimum, 188; R. viscosum, 66
"Rhododendrons for Everyone," 281
Ribes speciosum, 283, 396, 436
Richmond Hill: view from, 62; vista from, 382
Riddick, Mr. and Mrs. J., golden wedding of, 22
Roadside fences, 472
Robinia Pseudacacia, 389
Robinson, Dr. W., appointment of, 103
Rock garden, dwarf Conifers for the, 243
Rock gardens, judging, 31
Roddigas, M. Edgar, long service of, 462
Rohdea japonica, 347
Rohde, Eleanour Sinclair (*A Garden of Herbs*), 292
Romanzoffia, 6
Rosa alpina, 206; R. rubrosa, 327
Rose beds, planting new, 309
Rose garden, 66, 128, 189, 206, 288, 309, 327, 348, 367, 388, 408, 426; a national, 66; plea for a, at Lyons, 281
Rose gardens, two famous, 8
Rose planting, 348
Rose show: at Ghent, 122; in aid of a local hospital, 222
Rose Society, awards made by the American, 422
Roses: at Kew, 207; black spot disease of, 327; hardy bush, from Canada, 327; Moss, 426; Noisette, 408; of superior merit, 66, 189; old fragrant, 388; Polyantha, 367, 408; the best garden, 288
Roses, varieties of: Agnes, 282, 327; Angèle Pernet, 327; Dame Edith Helen, 66; Duchess of Atholl, 128; Etoile de Hollande, 207; Gruss an Teplitz, 348; Lady Sylvia, 388; Mrs. Beatty, 67; Paul's Scarlet Climber, 327; Rev. F. Page Roberts, 66; Salmon Spray, 207; Scarlet Glory, 67
Roseraie de l'Hay, 8
Roumanian Horticultural College, a new, 63
Roundwood Park, Willesden, 175
Rous Lench Court, sale of, 41
Royal Agricultural Society's show, attendance at the, 62
Royal Botanic Society's greenhouses, 381
Royal Caledonian Horticultural Society's outing, 102
Royal Gardeners' Orphan Fund, 77
Royal Horticultural Society: examination, 22; examinations in 1927, 382; Fruit Show, 221; Gardens Club, 2; the new Hall, 222, 281, 301, 322
Royal Society of Arts: lectures at the, 342; medal award of the, 42
Royal visit: to Messrs. Sutton and Sons, 1; to the Handsworth Nurseries, 442
Rubber exports, the restrictions of, 342

Rubber production, 421
Rudbeckia speciosa, 366
Ruellia macrantha, 372
Rural amenities, 342
Rural districts, rating in, 381
Rural roads, grants for, 262
Russell, Sir Edward J., awarded the Royal Society of Arts Medal, 42
Rust on perpetual Carnations, 468

S

SABATIER, PROF. PAUL, AWARDED THE ALBERT MEDAL, 3
Sabbatia campestris, 107
Saffron town, the, 182
Sage, a flowerless, 406
Salads, winter, 395
Salaman, Dr. Redcliffe N., 41, 162
Salpiglossis, 48
Salvia caerulea, 302 ; S. Harbinger, 6 ; S. involucrata var. Bethellii, 356 ; S. Pittieri, 436 ; S. splendens, 48 ; S. uliginosa, 366 ; S. virgata nemorosa, 347
Sander Gold Medal for the best novelty of 1926, 502
Sanders, T. W. (*Fruit and its Cultivation*), 312 ; the late, 461
Satyrium coriifolium, 182
Saunders, Dr. William, awarded the Van Fleet Medal, 241
Saxifrage aizoides, 6 ; S. Aizoon, 286 ; S. aquatica, 286, 346 ; S. Cotyledon var. caterhamensis, 427
Scabiosa graminifolia, 167
Schizocodon solanelloides, 346
Scholarships at Swanley, 63
Scholarships for agricultural workers, 142
Scientific exhibits at Chelsea show, 236
Scotch Potato trials, 101
Scotland : acquisition of new forestry land in, 102 ; double cropping in, 303 ; garden notes from south-west, 50, 90, 151, 208, 268, 308, 431, 470 ; high Sugar-beet yields in, 382 ; Potato blight in, 242 ; Sugar-beet cultivation in, 422, 494
Scott, Dr. D. H., honour for, 402
Scottish alpine flora, 382
Season, the caprices of the, 21
Scottish classification of Sweet Peas, 382
Scottish Sweet Pea trials, 203
Sedum album chloraticum, 366 ; S. Chanetii, 352
Seed firm, jubilee of a, 22
Seed-testing in Holland, 242
Seeds : staining imported, 62 ; the vitality of, 216
Senecio clivorum, 468 ; S. Smithii, 71
Sex, the chemistry of, 141
Shakespeare's Mulberry tree, 361
Sheffield Fruit Market, fire at, 182
Shrewsbury show receipts, 162
Shrubs : evergreen, for walls, 209 ; from cuttings, 66
Sibthorpia europea in grass, 436
Sida Napae, 347
Sidalceas, Mr. Hemsley's, 126
Silene maritima, 366 ; S. Saxifraga, 87
Silver-leaf disease, 155, 176 ; Order, 43
Slugs and King Edward Potatos, 336, 396, 436, 477
Smith, Mr. Joseph, 102
Snell Memorial Medal, award of the, 41
Societies :—Aberdeen Horticultural, 156 ; Abergavenny Agricultural, 277 ; Ayr Chrysanthemum, 478 ; Ayrshire Agricultural, 419 ; Badsey Flower Show, 120 ; Bakewell Horticultural, 156 ; Banff Horticultural, 277 ; Barrow Horticultural, 456 ; Bermondsey and Rotherhithe Horticultural, 119 ; Birmingham and Midland Gardeners', 336, 398, 419, 478 ; Birmingham Chrysanthemum, 437 ; Brighton, Hove and Sussex Horticultural, 415 ; British Gladiolus, 176 ; British Mycological, 358, 498 ; Bushey Horticultural, 417 ; Bute Horticultural, 199 ; Cardiff and County Horticultural, 258 ; Chamber of Horticulture, 478 ; Cheltenham Floral Fête, 18 ; Corbridge-on-Tyne and District Gardeners', 478 ; Croydon Chrysanthemum, 456 ; Cumnock Horticultural, 159 ; Dumbartonshire Sweet Pea, 118 ; Dundee Horticultural, 199 ; Elgin Horticultural, 156, 277 ; Elstree and District Horticultural, 98 ; Falkirk Rose, 119 ; Girvan Horticultural, 278 ; Glasgow and West of Scotland Horticultual, 218, 379, 398 ; Guildford and District Gardeners,' 18, 60, 76, 279, 357, 399, 459 ; Guildford Chrysanthemum, 437 ; Haarlem Bulb Growers, 319 ; Hanley Park show, 78 ; Harrogate Horticultural, 119 ; Highland Horticultural, 198 ; Hitchin Chrysanthemum, 439 ; Holland (Lincs.) County Potato show, 378 ; Imperial Fruit show, 376 ; Irish Gardeners,' 419 ; Kent County and Soft Fruit show, 78 ; Kingston and Surbiton Chrysanthemum, 419 ; Kingswalden Horticultural, 139 ; Lancaster Chrysanthemum, 456 ; Lancaster shows, 258 ; Lea Valley District Nurserymen and Growers', 499 ; Leicestershire Agricultural, 17 ; London Allotments and Gardens, 259 ; Manchester and North of England Orchid, 99, 139, 259, 278, 336, 358, 456, 479; Marlow and District Chrysanthemum, 398 ; Moray and Nairn Foresters, 277 ; Moray Field Club, 119, 298 ; Morecambe Horticultural, 258 ; Mosspark (Glasgow) Horticultural, 56 ; National Carnation and Picotee, 59 ; National Chrysanthemum, 219, 258, 298, 358, 396, 418, 458, 499 ; National Dahlia, 239, 458 ; National Rose, 37, 96, 179, 197, 236 ; National Sweet Pea, 38, 338 ; North of England Horticultural, 318 ; Orchid Club, 437, 498 ; Peebles Chrysanthemum and Vegetable, 357 ; Reading and District Gardeners', 56, 298, 357, 398, 437, 458, 498 ; Royal Agricultural, 39; Royal Caledonian Horticultural, 99, 237, 259, 379, 457 ; Royal Gardeners' Orphan Fund, 77 ; Royal Horticultural, 16, 57, 97, 137, 176, 217, 254, 278, 297, 316, 337, 358, 377, 399, 417, 457 ; 497 ; Royal Horticultural of Ireland, 138 ; Royal Lancashire, 156 ; Royal Scottish Arboricultural, 277, 398 ; Saffron Walden Horticultural, 119 ; St. Albans Gardeners', 437 ; Sandy Horticultural, 198 ; Scottish National Sweet Pea, Rose and Carnation, 77, 136 ; Scottish Pansy and Viola, 179 ; Scottish Seed and Nursery Trade, 496 ; Shropshire Horticultural, 157 ; Smithfield Club, 479 ; Société d'Horticulture et des Jardins Ouvriers de la Région du Nord, 56 ; Société Nationale d'Horticulture de France, 416 ; Southport Floral Fête, 178, 195 ; Tamar Valley and District, 96 ; Torquay and District Gardeners,' 38 ; United Horticultural Benefit and Provident, 19, 159, 258, 357 ; Wolverhampton Floral Fête, 58
Society of Amateur Botanists, 502
Soils, the quality of, 172
Solanum crispum var. autumnale, 148 ; S. Wendlandii, 328
Solidago missouriensis, 267
Sophro-Laelio-Cattleya Prudence, 211
Soudan, increasing native cultivation in the, 243
Southend Parks, Chrysanthemums in the, 433
Southport, Hydrangeas at, 101
Southport show impressions, 216
Spartium junceum, 427
Species, the conception of a, 172
Spigelia marilandica, 306
Spinach : Beet, 76 ; the Mexican tree, 315 ; winter, 175
Spiraea Aruncus, 46
Spitalfields Fruit Market, extension of, 281
Spraying by aeroplane, 401
Stacey, Mr. G. W., 482
Stanley Park, Blackpool, opening of, 301
Stansfield, Mr. W. H., 342
Stephanotis floribunda, 503
Sterility, international conference on flower and fruit, 94
Sternbergia lutea, 426
Sternbergias, 446
Stock, origin of the double-flowered, 442
Stokesias, 147
Stove and greenhouse plants at Chelsea show, 1928, competitive classes for, 301
Strawberries, 155
Streptocarpuses, 306
Sturry Court, 262
Styrax Hemsleyanum, 29 ; S. officinale in France, 381 ; S. Wilsonii, 66
Sugar Beet industry, 183 ; in Scotland, 382, 482, 494
Sugar-cane plantation, devastating fire on a, 122
Sugar crop, damage to the Havana, 362
Sulphate of ammonia, scarcity of, 442
Sulphur : as an insecticide and fungicide, 33
Surrey beauty spots, preservation of, 1
Sutton and Sons' nursery, Royal visit to, 1
Swanley Horticultural College : new garden superintendent at, 282 ; scholarship entrance examination result, 63
Sweet Pea Avalanche, 274
Sweet Pea essay competition, 1926, 202
Sweet Pea exhibition in Belgium, 22, 342
Sweet Pea trials, 49 ; at Leith, 162 ; new, 222
Sweet Peas : for exhibition, 166 ; Scottish classification of, 382 ; under glass, 227
Symphyandra Wanneri, 226

T

TAX PUZZLES IN BELGIUM, 482
Testudinaria Elephantipes, 194
Teucrium Scorodonia crispum variegatum, 366
Thalictrum dipterocarpum, a double, 328
Thays, Don Carlos L., 182
"The British Herbal," 1743, 270
The Dell, Englefield Green, 374
Thermometer, the, 202
Tigridia Pavonia, 69
Tithe Act, 1925, 141
Tools, second-hand garden, 311
Torquay parks and gardens, 252
Tourists and English gardens, 482
Trade Marks, 180, 299, 400
Trade notes, 60, 160, 200, 219, 239, 259, 279, 300, 319, 360, 399, 480, 499
Tradescant, John, 442
Transplanting, on, 261
Traveller's observatory, a, 51, 92
Tredegar Park as show grounds, 322
Tree-felling competition, 162
Tree-planting, 148 ; in Ohio, 422
Trees and shrubs, 7, 29, 47, 66, 88, 105, 132, 147, 166, 188, 209, 232, 266, 289, 309, 332, 349, 371, 389, 408, 427, 452, 471, 486, 505 ; on the Pacific coast, 450 ; planting, 477
Trees : at Hillsborough Castle, 188 ; in Derbyshire, 69 ; injured by farm stock 32 ; liability for damage by falling, 15 ; mortality of roadside, 442 ; the planting of evergreen, 371
Trespass by animals, 52, 95
Trichostema lanatum, 107
Trifolium alpinum, 247
Tritonia hyalina, 87
Trough gardens, 469
Truffaut, M. Georges, 82
Tuberous plants, storing, in winter, 466
Tulips, 187, 206
Turnips, early, 253

U

ULTRA-VIOLET LIGHT, 421
Urospermum Dalechampii, 67

V

VALENCIENNES FLOWER SHOW, 23
Valentino, the late Mr. Rudolph, 162
Valuation appeal, a novel, 362
Vandalism in a northern public park, 342
Van Fleet Medal, award of the, 241
Vapourer moth hunt in Hyde Park, 302
Variegation, 481
Vegetable crops : care of winter green, 414 ; clearing exhausted, 76
Vegetable dyes, African, 61
Vegetable garden, 15, 36, 76, 118, 155, 175, 194, 215, 236, 253, 315, 356, 395, 414, 435, 455, 476, 495, 510 ; groundwork in the, 477; seasonable work in the, 356 ; the value of deep trenching in the, 495
Vegetables : forcing, on hot-beds, 435 ; imported, and disease, 83
Vegetative propagation, 181
Venidium calendulaceum, 127
Veratrum californicum, 169
Veronica canescens, 186 ; V. Catartactae, 266
Versailles, zoological professor at, 343
Viburnum Opulus fructu-luteo, 486
Viceregal Gardens, Simla, 132
Victoria Medallists, the original, 121
Victoria Park, London, Chrysanthemums in, 454
Vienna : a new flower market in, 462 ; autumn horticultural exhibition in, 423 ; centenary exhibition in, 82 ; English motor lawn mowers in, 443
Vine : crimson mildew of the, 477 ; downy mildew of the, 448
Vines, renovating, 194
Viola gracilis, 230
Viola species in catalogues and lists, 11, 26
Virex glass, 456
Vita glass, 421
Vitry, the Pear trees of, 361
Volcanos, flora on, 42

W

WAHLENBERGIA SERPYLLIFOLIA MAJOR, 346, 436
Waldsteinia trifolia, 106
Walker's, Miss Winifred, gift to St. Bartholomew's hospital, 302
Wallflowers, 226
Ward's, Mr. F. Kingdon, ninth expedition in Asia, 130, 170, 290, 410
Wasps, the control of, 215
Water garden, 307, 468, 480
Watford, combined show proposed for, 422

Watkins, Mr. Alfred, 362 ; presentation to, 122
Watkins and Simpson, jubilee of the firm of, 22
Weather glass, how to predict the weather by the, 370
Weeds, the eradication of garden, 315
Welsh garden, notes from a, 26, 92, 168, 228, 308, 412, 431, 507
White fly, the destruction of, 136
White Medal, award of the, 182
Whyteleaf, Surrey, new recreation ground at, 102
Wild flowers : favourite, 62 ; fines for picking, 402
Wild garden, 28, 386, 406, 468
Wilkins, V. E. (*Research and the Land*), 393, 441
Willett Memorial park, 61, 343
Willow, Apple grafted on the, 96
Wilmshurst, Mr. David, appointment of, 282
Window-dressing competition for London fruit shops, 262
Wines, sale of, at the Beaune Hospice, 462
Wireworms in glasshouses, the control of, with Cyanogas, 233
Wisley Gardens : awards to flowers at, 121 ; Dahlias for trial at, 292 ; developments at, 292 ; notes from 71, 151, 191, 249, 351, 432, 508
Woodland garden, 206, 229
Woodward, Marcus (*The New Book of Trees*), 473
Work, Paul (*Tomato Production*), 354

X

Xerophyllum asphodeloides, 406

Y

Yucca filamentosa, 452

Z

Zauschneria californica, 127
Zinc labels, 2
Zoological professor at Versailles, 343

LIST OF ILLUSTRATIONS.

A

Abelia Schumannii, 63
Abies Forrestii, 427
Amaryllis Belladonna at Wrest Park, 346
Anthemis sancti-johannis, 271
Apple Worcester Pearmain affected with "eye" rot disease, 373
Apples : Belle de Pontoise, 335 ; Exquisite, 235 ; Rosemary Russet, 175 ; Royal Jubilee, 435
Aquilegias raised at the Central Experimental Farm, Ottawa, 467
Arctostaphylos diversifolia, 67
Arctotis breviscarpa, 31
Arnott, Mr. S., portrait of, 142
Astridia velutina, 447

B

Bartholina pectinata, 167
Bayley Balfour Memorial in the Royal Botanic Garden Edinburgh, 491
Begonia Altrincham Pink, 405
Begonias, a house of, at Twerton Hill, Bath, 272
Berberis Autumn Cheer, 487
Black Currant Davison's Eight, 275
Brasso-Laelio-Cattleya C. W. Matthes, 287 ; B.-L.-C. Elektron, 303 ; B.-L.-C. Irma, 227 B.-L.-C. Margery, 391
Bridgeford, Mr. J. M., portrait of, 322
British Florists' Federation's Gold Medal exhibit of market Chrysanthemums and other plants, 431
Broccoli, late, on dug land at Aldenham, 494 ; on trenched land, 495
Brown, Mr. C. H., portrait of, 22
Buddleia Forrestii, 489

C

Cabbage Butterflies : eggs, caterpillars and chrysalides of, 129
Calceolaria John Innes, 445
Campanula lactifolia macrantha, 163
Canna Ensign, 305
Cantua buxifolia, 269
Carnation The Favourite, 463
Carpenteria californica at Castleford, Chepstow, 265
Cattleya Mimosa var. Golden Queen, 267
Charieis heterophylla, 5
Cheiridopsis Marlothii, 9 ; C. Meyeri, 9 ; C. peculiaris, 34, 35 ; C. Roodiae, 73
Cherry, the Hill, of Japan, 330, 331
Cherries in Japan, 409
Chrysanthemums : a first-prize vase of, 383 ; British Florists' Federation's exhibit of, 431 ; at Miller Park, Preston, 483 ; at Hesketh Park, Southport, 507
Chrysanthemums : alba, 345; Everlasting, 403 ; Heliose, 443
Clayton, Mr. E., portrait of, 242
Chirita Marcanii, 343
Cockayne, Dr. L., portrait of, 222
Collomia coccinea, 147
Copenhagen Municipal Gardens, views in the, 310, 311, 313
Cordyline australis : flowering in an Ayrshire garden, 27 ; in the Princess Gardens, Torquay, 3
Cordyline Banksii flowering at Glasnevin, 70
Corydalis vesicaria, 165
Corry, Mr. W. L., portrait of, 42
Cotson, Mr. T., portrait of, 202
Creighton, Mr. A., portrait of, 462
Cypripedium guttatum, 429

D

Daffodils in the kitchen garden at Brocket Hall, 205
Dahlia Irma, 263
Daphne Cneorum, 411
Delphiniums : Howard H. Crane, 273 ; Mrs. Foster Cunliffe, 273
Didymaotus lapidiformis, 149 ; in flower, 149
Douglas Fir trees in Vancouver Island, tall, 451
Downy mildew of the Vine, 448, 449

E

Escallonia Iveyi, 105
Eucryphia Nymansay, 177

F

Fritillaria nobilis, 323
Fruit, first prize exhibit of dessert, at the R.H.S. Fruit Show, 325
Fuchsia serratifolia, 423
Funatsu, Mr., portrait of, 402

G

Gaultheria Veitchiana, fruiting shoots of, 203
Gentiana Froelichii, 246 G. prolata 245 ; G. sikkimensis, 257 ; G. stragulata, 247
Gilia californica, 11
Guernsey, horticulture in the island of, 348, 349, 365, 368, 369

H

Hales, Mr. W., portrait of, 302
Hall, Mr. J. O., portrait of, 502
Hall, Sir Daniel, portrait of, 122
Hedge-clipper, the Little Wonder, 60
Hemerocallis E. A. Bowles, 127 ; H. Margaret Perry, 126
Hydrangea, a fine plant of, at Niton Undercliff, Isle of Wight, 225
Hydrangea vestita at Monreith, 151

I

Iris Flammeschwert, 469 ; I. Kaempferi at Ottawa Experimental Station, Canada, 307
Irrawaddy, sketch map of the Upper, 410

L

Ledum glandulosum and Pinus contorta in Alaska, 370
Levavasseur, M. Lucien, portrait of, 262
Lilium giganteum at Bishops Hall, Romford, 125 ; L. philippinense var. formosanum, alpine form of, 190 ; fruit of, 191 ; tall form of, 191 ; L. regale in America, a field of, 251 ; L. sulphureum at Glasnevin, 249
Little Wonder Hedge Clipper, 60
Lysimachia punctata at Wisley, 65

M

Magnolia macrophylla, 7
McLaren, Mr. John, portrait of, 502
Meconopsis quintuplinervia, 10
Michaelstowe Hall, Harwich : the rock and water gardens at, 230 ; the terrace gardens and dry wall at, 231
Millwater, Ockham, Surrey, views in the gardens at, 48, 49, 50, 51
Montbretia E. A. Bowles, 183
Moore, Mr. H. J., portrait of, 2
Morrison, Mr. W., portrait of, 282

N

Narcissus Bulbs attacked by botrytis, 68 69
Nicholls, Mr. G. J., portrait of, 62
Nomblot, M. Alfred, portrait of, 382
Nymphaea amabilis, 83

O

Odontoglossum crispum var. Mrs. Stanley Baldwin, 123
Odontonia Nesta, Stamperland var., 503
Oenothera trichocalyx, 363
Olearia insignis, 91
Ononis fruticosa, 23
Oxalis magellanica at Glasnevin, 72

P

Pallett, Mr. George T., portrait of, 422
Pear Sir Harry Veitch, 375
Pemberton, Rev. J. H., portrait of the late, 99
Pentstemon cordifolius, 168
Periploca graeca, fruits of, 485
Phlox Annie Laurie, 143
Phlox Laphamii, 509
Phormium tenax in a Sussex garden, 387
Phyteuma comosum in its native habitat, 145
Picea Breweriana, branchlet and cones of, 389 ; P. rubra at Stanage Park, 505 ; P. sitchensis, 471
Pinus contorta, 320
Platyclinis filiformis, a fine plant of, 187
Pleisopilos Bolusii, 88, 89
Plums : Jefferson, 293 ; Jodoigne Green Gage, 355 ; President, 415 ; Transparent Gage, 475
Pontederia cordata at Glasnevin 243 ; P. cordata var. lanceolata, 25
Potato inflorescence, 74
Potato leaf : showing non-rigid, drooping mid-rib, 32 ; close type of, 33 ; open type of, 33
Potato leaves, types of, 54, 55
Potato shoot showing waved wings 13 ; showing unwaved wings, 15
Potato tubers, types of, 134
Potatos exhibited by Messrs. J. Carter and Co., 395
Poterium obtusum, 283
Potinara La Paz, 211
Primula Florindae, 425 ; P. Franchetii, 385 ; P. Palinuri, 85 ; P. pulverulenta, Bartley Strain, 309
Proustia pyrifolia, 350
Punctillaria magnipunctata, 212, 213; P. Roodiae, 229

R

Ranunculus Lyallii, 407
Rhododendron arboreum in Ceylon, 289 ; R. chasmanthoides, 209
Rohdea japonica var. Tamajishi, 347
Rosa rubrosa, 329
Roses : Agnes, 327 ; Bedford Crimson, 110 ; Billy Boy, 45 ; Coral Cluster, 367 ; Duchess of Atholl, 131 ; Lady Helen Maglona, 43 ; Lady Worthington Evans, 97 ; Patience 223 ; Shot Silk, a basket of, 207
Rubus nutkanus in Alaska, 371
Ruscus aculeatus, 465

S

Sabbatia campestris, 107
Salaman, Dr. Redcliffe Nathan, portrait of, 162
Salvia involucrata var. Bethellii, 351
Saxifraga Aizoon, 285
Scabiosa anthemifolia rosea, T. Hay's variety, 103
Senecio Smithii at Glasnevin, 71
Smith, Mr. Joseph, portrait of, 102
Sophro-Laelio-Cattleya Prudence, 109
Southport show : exhibits at the, 185, 189, 195, 197, 198
Sphaeralcea Fendleri var. Hascombe Orange, 153
Stacey, Mr. G. W., portrait of, 482
Stansfield, Mr. W. H., portrait of, 342
Styrax Hemsleyanum, 29

T

Thays, Don Carlos L., portrait of, 182
Tradescant, Senr., John, portrait of, 442
Tree growth, stunted, on the White Horse Pass, Yukon Territory, 450
Tritonia hyalina, 87
Truffaut, M. Georges, portrait of, 82

V

Vegetables exhibited by the Hon. Vicary Gibbs at Southport Show, 185
Veratrum californicum, 169

W

Ward's, Mr. F. Kingdon, Ninth Expedition in Asia : views of, 170, 171, 290, 291
Wasps' nest with dead wasps, 215
Watkins, Mr. Alfred, portrait of, 362
Wigan Cup for Roses, 255

SUPPLEMENTARY ILLUSTRATIONS.

Abies cephalonica at Stanage Park (Nov. 20)
Daffodils naturalised by the lake side at Brocket Hall, Hertfordshire (October 23)
Dendrobium Thwaitesiae (August 21)
Hydrangeas in the Conservatory, at Hesketh Park, Southport (August 7)
Millwater, Ockham, Surrey, garden steps at (July 17)
Miltonia vexillaria var. Snowflake (December 25)
Ranunculus asiaticus (September 18)
The Dome Gardens, Brighton (November 6)
Yucca filamentosa at Usk Priory (December 4

Coloured Plates.

Apple S. T. Wright (October 9)
Cestrum Newellii (September 4)
Clivia miniata, a fine garden variety of (July 3

THE Gardeners' Chronicle

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CONTENTS.

Afforestation development in Scotland ... 2
Albert Medal, award of the 3
Alpine garden—
  Aethionema cordifolium 6
  Dianthus superbus 6
Bog garden—
  Saxifrage aizoides ... 6
Cordylines at Torquay 3
Ferns, investigation of 3
Flower garden—
  Erysimum linifolium 6
  Salvia Harbinger ... 6
Forest playground in the Lake Country ... 3
Fruit trees, the manuring of 1
"Gardeners' Chronicle" seventy-five years ago 3
Hardy flower border—
  Aster alpinus ... 6
  Charieis heterophylla 6
  Romanzoffia ... 6
Indoor plants—
  Clivia miniata ... 8
  Nicotiana Sanderae and N. suaveolens 8
Iris garden—
  Iris ochroleuca ... 13
Law note—
  Liability for damage by trees 15
Mesembryanthemum . 9
Moore, Mr. H. J. ... 2
National Sweet Pea Society 2
Obituary—
  Gladstone, Sir J. R. 19
Ormskirk Potato trials 1
Paeony exhibition in Holland 3
Plants, neglected ... 12
Plants new or noteworthy—
  Gilia californica ... 11
  Meconopsis quintuplinervia ... 11
Potatos, early 8
Potato, intervarietal differences in the ... 13
Primula, new Tibetan species of 10
R.H.S. Gardens Club 2
Rose Gardens, two famous 8
Societies—
  Cheltenham Spa ... 18
  Guildford and District Gardeners'... 18
  Leicestershire Agricultural 17
  Royal Horticultural 16
  United Horticultural Benefit and Provident 19
Trees and Shrubs—
  Abelia chinensis ... 7
  Cytisus Reverchonii 7
  Fabiana imbricata... 7
  Jamesia americana 7
  Magnolia macrophylla 7
Viola species in catalogues and lists ... 11
Week's work, the ... 4

ILLUSTRATIONS.

Charieis heterophylla 5
Cheiridopsis Marlothii, 9; C. Meyeri 9
Cordyline australis flowering in the Princess Gardens, Torquay 3
Gilia californica 11
Meconopsis quintuplinervia 10
Magnolia macrophylla 7
Moore, Mr. H. J., portrait of 2
Potato shoot showing waved wings, 13; showing unwaved wings 15

SUPPLEMENT PLATE.
A fine garden variety of Clivia miniata.

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last fifty years at Greenwich, 62.4.

ACTUAL TEMPERATURE—
The Gardeners' Chronicle Office, 5, Tavistock Street, Covent Garden, London, Wednesday, June 30, 10 a.m. Bar. 34°. Temp. 72°. Weather, Fine.

The Manuring of Fruit Trees.

1.-The Problem.

To everyone engaged in growing-fruit, whether for market or for private use, the problem of how to manure for increased fruit production is both acute and difficult. Those happy people whose well-protected orchards planted with well-established varieties of the best and most suitable kinds, in soil which is in all respects kindly, may indeed be tempted by reason of the succession of good crops to disregard the problem. But less-favoured mortals who walk mournfully through their Apple plantations in this present year and note the dearth of fruit—a mere sprinkling where full crops were hoped for—will realise that if only the knowledge were available the lightness of their present crop might, even in such an unfavourable season as the present one, have been to some extent prevented. Recognising these facts, the fruit-grower will find satisfaction in learning that Mr. Wallace and his colleagues at Long Ashton are engaged in investigating this most important subject—the proper manuring of fruit trees. Others have embarked in this research before them; but whosoever will read the results which have been obtained will realise first that they are of little worth and second that the problem is far more complex than it was supposed to be when these experiments were started. For to mention only one of many disturbing factors, young fruit trees are being constantly interfered with—for their and their possessor's good—by pruning operations, and these operations may, and undoubtedly do, tend to obscure, or even distort, the results of manurial experiments. Recognising this fact Mr. Wallace has determined to make haste slowly and to conduct the preliminary part of his investigations not only in the orchard, but also in the laboratory. In this he has undoubtedly shown wisdom, for diversity of soil and of variety of fruit tree, of climate, and of culture, make it, as experience has shown, extremely unlikely that results of general value will be obtained from orchard experiments alone. Furthermore, the author of the interim report* now under consideration is aware that the problem of manuring may be looked at from more than one angle. Valuable results are no doubt to be obtained from orchard trials on known varieties so designed as to discover the manurial treatment which leads to the highest and most consistent yields, keeping "annual" croppers at a high and steady yield and converting "biennial" croppers into annual bearers. There is, however, another and very profitable aspect from which the problem may be envisaged. Few orchards are as profitable as they might be. The cause of poorness of yield is, of course, a variable one. Here due to unsuitable soil, there to the planting of poor varieties, in another place associated with faulty cultivation and so on. A most useful line of work should therefore be to learn from experiment how to diagnose those defects which are to be met with in most orchards and so to discover which of them may be mitigated by manurial treatment. To this end Mr. Wallace has in his pot cultures set about finding out what are the symptoms presented by fruit trees which are caused experimentally to suffer from lack of this or that essential mineral element. Anyone skilled in cultivation can tell by inspection of a crop whether it lacks nitrogen and he can form a shrewd guess whether the addition of phosphates or of potash, or both, is likely to produce an improvement. But to a much less extent have we "got our eye in" with respect to fruit crops and the manifestation of their needs by their appearance. This, then, should prove a valuable line of investigation. So also should that other in which Mr. Wallace is embarking that is concerned with soil re-action. Where the soil—and in the case of deep-rooting plants, the subsoil—is too much on the acid or alkaline side, crop production in general falls off. Hence it is essential to learn something more than is at present known with respect to the growth and crop-reaction of fruit trees to soil conditions of acidity and alkalinity. Such an investigation as that now being pursued at Long Ashton must, perforce, be a long one. Quick results are not to be looked for and, indeed, in view of the proved uncertainty of the results of previous investigations, are to be discouraged. We should all, therefore, be prepared to possess our souls in patience and to muddle along as best we may until such time as these fundamental researches now in progress shall have borne fruit. We hope, however, that something may be done to speed up the rate of discovery by duplicating and triplicating the experiments at the other Fruit Research Stations. Already East Malling has done valuable work in this direction and if its resources were adequate it would no doubt extend its investigations. The Ministry of Agriculture — very wisely — encourages this sort of team-work by all means in its power. Having regard, therefore, to the complexity and importance of the problem of manuring for fruit production and to the length of time which must, perforce, elapse before sure results are obtained, we may hope that no lack of means may prevent a large, well-conceived and co-ordinated scheme of experiment being conducted at all three stations—Long Ashton, East Malling and Cambridge. The results already obtained by Mr. Wallace in this the first part of his investigation, are proof that the experiments are being conducted on sound lines; but these results must form the subject of a subsequent article, the purpose of this note being to draw attention to the great need for a large plan of research.

Report of the Hardy Fruit Crops.—Following our usual practice we hope to publish early in August statistical tables showing the condition of the hardy fruit crops in the United Kingdom. Some of those who have previously contributed to our report may have changed their addresses and we shall be pleased if these and any other readers especially concerned in fruit-growing will make immediate application to the Editors for one of the forms.

Preservation of Surrey Beauty Spots.—We learn that the National Playing Fields Association has received a munificent gift of £10,000 from an anonymous donor for the purpose of providing playing fields for the children of South London. The generous donor has expressed a wish that his gift should also be utilised for the preservation of the natural beauty spots in Surrey in the neighbourhood of Mitcham, Morden, Sutton, Cheam and Carshalton. He also promises a further donation of £10,000 provided an additional £10,000 is subscribed by the people of London south of the Thames during the next twelve months.

Royal Visit to Messrs. Sutton and Sons.—On the occasion of his recent visit to Reading, His Royal Highness the Prince of Wales was received by Mr. Leonard Sutton, the Mayor of Reading, and during his stay he paid a visit to Messrs. Sutton and Sons' establishment, where he was particularly interested in the methods adopted by this firm for the dispatch of seeds to all parts of the world, for testing the germination power of seeds, for securing purity of stock and the raising of new varieties of flowers and vegetables.

Saltaire Rose Show abandoned.—It is with very much regret we learn that the Committee of the Saltaire, Shipley and District Rose Society is compelled to abandon its exhibition for the present year, owing to the unsettled industrial situation, which they consider would have made it impossible for them to hold a satisfactory show.

Playing Fields for London Children.—The National Playing Fields Association announces that General Maxwell, on behalf of the Fifty-eighth London Division, has offered, on certain conditions, not less than £3,000 to provide a playing field for the boys and girls of London, in memory of the men of the Division who lost their lives in the great war.

Ormskirk Potato Trials.—The National Institute of Agricultural Botany wishes to extend an invitation to parties of farmers, potato growers and merchants, and agricultural advisory and administrative officers to visit the Potato Testing Station, Ormskirk, singly or in parties, on the

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* Experiments in the Manuring of Fruit Trees. By T. Wallace, M.C., University of Bristol Agricultural and Horticultural Research Station, Long Ashton. *Journal of Pomology*. Vol. IV, 3, 4, 1925.

18th or 19th August, 1926, or, if these dates are inconvenient, on any other week-day between the 9th and 21st August. Visitors will be able to see the official trials of some hundreds of new varieties of new Potatos for immunity from wart disease. These are carried out at Ormskirk for the Ministry of Agriculture and Fisheries, which certifies the results. The other trials open to inspection include the Lord Derby Gold Medal Trials and Yield and Maturity Trials of the leading immune main crop Potatos. There are also large numbers of demonstration plots of the chief varieties of British and foreign Potatos, together with those certified by the Ministry of Agriculture as immune in 1924 and 1925. Those wishing to organise parties to see the trials should write to the Superintendent of Potato Trials, Potato Testing Station, Lathom, Ormskirk, Lancs., suggesting alternative dates. Individual visitors will be equally welcome, but they, too, should inform the Superintendent of the date of their visit not less than a week in advance. Ormskirk is conveniently reached by a frequent service of local trains from either Liverpool or Preston, and lunch may be obtained in the town.

Extermination of the Parsley Fern in Wales.—Mr. H. Augustus Hyde, M.A., Keeper of the Department of Botany, National Museum of Wales, Cardiff, writes—"It has very recently been brought to my notice that the Parsley Fern, one of the rarer plants of Wales, is being rapidly exterminated from one of its haunts in Montgomeryshire by the efforts of money-grubbing collectors. It is stated that the incentive to root up this Fern for sale is supplied by Orchid growers who find that its roots form a suitable nidus for the cultivation of Orchids and are willing to pay as much as 15/- to £1 per bag for material of the Fern. May I be allowed to appeal to Orchid growers to help in the suppression of this traffic by refusing to buy the Fern referred to? They will thus earn the gratitude of all lovers of our native flora."

National Sweet Pea Society.—The exhibition in the Montpellier Gardens, Cheltenham, on Wednesday and Thursday of the current week, was one of the best of the twenty-six this Society has held. Competition was keen throughout most of the sixty-one classes, and exhibitors came from Scotland, Wales, Ireland, and many parts of England, bringing flowers of wonderful size and quality and in a splendid range of colours. It was a very beautiful show. Messrs. Sutton and Sons were successful in winning both the Bath Cup and the Eastbourne Cup. Mr. Leonard Collingridge (the President of the Society) and Mrs. Collingridge entertained the Committee to dinner at the Queen's Hotel on the eve of the show, and on the opening day, after an imposing opening ceremony, the Officers and Committee of the Cheltenham Floral Fête entertained the judges of their own and the National Sweet Pea Society's Show, as well as the principal exhibitors, to lunch in the Rotunda—a famous fashionable rendezvous in by-gone days.

The Fream Memorial Prize.—The Fream Memorial Prize, which is annually awarded by the Ministry of Agriculture to the candidate who obtains the highest marks in the examination for the National Diploma in Agriculture, has been won this year by Mr. James A. Gilchrist, a student of the Glasgow and West of Scotland Agricultural College and Glasgow University. The value of the prize this year is about £7, which is to be devoted to the purchase of books.

R.H.S. Gardens Club.—The annual meeting of the R.H.S. Gardens Club was held at Wisley on Saturday, June 26, when the present and past students and employees of the Royal Horticultural Society assembled in large numbers in the gardens. At 1 p.m. lunch was served in the Hut Hotel. On returning to the gardens the members inspected the extensive rockery now well furnished with flowers in immense numbers and variety. Large patches of different shapes in the rockery have been planted, according to the form of the terraces and their contours. Many suitable kinds have been planted in the crevices of the rocks, especially Saxifrages Asperula suberosa, and Erodium corsicum, which are now flowering profusely. Many species of Cistus were doing well and the hybrid C. purpureus was particularly fine. In the woods Primulas were abundant, as was Lilium giganteum in all stages of growth and flowering. The alpine house and the seven-acre field were also visited. The Director, Mr. F. J. Chittenden, entertained the members to tea in the Laboratory. At five o'clock the annual meeting was held for the election of officers, most of whom were re-elected. Mr. W. J. Dowson, M.A., was elected President in the place of Mr. A. C. Smith. The weather was fine throughout and the outing proved a great success.

Mr. H. J. Moore.—Although the older Kewites try to persuade themselves that there were no men like unto those of their own time at Kew, they cannot dismiss the fact that in more recent periods than theirs Kewites have arisen to maintain the honour of their *alma mater* as an educational institute. Mr. H. J. Moore, who was awarded the Carter Medal by the Canadian Horticultural Council in 1925 for his "persistent and energetic endeavours in the advancement of horticulture in Canada," must be included among the comparatively young Kewites to gain fame. In 1896, he commenced his horticultural career in Mr. Redpath's market garden at Blennerhasset, Cumberland, and three years later became apprenticed under Mr. W. Stewart, in the late Sir Wilfred Lawson's gardens at Brayton, where he had the advantage of a training under glass as well as in out-door gardening. In 1901 he became journeyman at Rûg Hall, Corwen, and in 1903, moved to Thoresby Park Gardens, Ollerton, Nottinghamshire. In the same year the opportunity presented itself of entering Kew; this he accepted, and for one year he served under Mr. Osborn in the Ornamental Department, eventually becoming deputy-foreman in the propagating houses. In 1907 he obtained an appointment as Gardener and Horticultural Instructor under the Trustees of the Cornell University, Ithaca, New York, a position he held until the end of 1909, when he was appointed Landscape Gardener, with the charge of all horticultural features, to the Commissioners of Queen Victoria Park, Niagara Falls. While in this position, Mr. Moore was responsible for the planting of an eighteen-mile boulevard along the Upper Niagara River, from Niagara Falls to Lake Erie—a large and notable undertaking successfully carried out. His work at Niagara brought him into considerable prominence in Canada, with the result that in 1920 the Ontario Government offered him the position of Forester of Provincial Highways, and two years later made him Lecturer in Horticulture to the Horticultural Societies of the Province, a position he fills with satisfaction to the Ontario Department of Agriculture, and great credit to himself. In a letter received quite recently, Mr. Moore writes, modestly, "I do not take credit myself for having accomplished much, but in all my work I have tried to honour Kew, and to Kew is due whatever honours I have obtained."

MR. H. J. MOORE.

Potato Disease.—It has been reported to the Ministry of Agriculture that Potato blight has made an early appearance, and growers are recommended to spray their crops at once. Spraying is, proportionately to its cost, by far the most profitable of the necessary operations attending up-to-date Potato culture. The cost of it is probably less than one-fifth as much per acre as the cost of fertilisers, and may be said to give as good a return, or more, under average conditions. Its value may, therefore, be more than five times that of fertilisers, cost for cost, in an average season. It is true that the incidence of Potato blight varies considerably in different seasons and in different parts of the country, and that it is more widely spread in wet seasons than in dry ones. As a general rule, growing crops should be sprayed at least twice. The first spraying of second early and maincrop Potatos should be taken in hand at once before any blight develops. The second spraying should be done about three weeks after the first. Where the crop is found to be damaged by aphides spraying is, however, likely to cause serious injury to the foliage, and should not be carried out. Both Bordeaux and Burgundy mixtures are efficient for the purpose but where good lime is not readily obtainable, Burgundy mixture should be used. The mixtures for spraying, say, one-third acre (fifty rods) plot are made up as follow:—Burgundy mixture: Four pounds of sulphate of copper is dissolved in five gallons of water, then diluted up to thirty-five gallons. In another vessel, five pounds of washing soda is dissolved in five gallons of water and the two solutions mixed together. Bordeaux mixture: Four pounds of copper sulphate, two pounds of quick lime from freshly burnt lumps, and forty gallons of water. The copper sulphate should be dissolved in thirty-five gallons of water, and the lime placed in a separate vessel and slaked slowly, making up to another five gallons; it should then be passed through a fine sieve and added to the copper sulphate solution. Iron or zinc vessels should not be used in making these preparations.

Zinc Labels.—A correspondent writing in *Horticulture*, U.S.A., June 15, recommends labels made of bright zinc written on with ink made by dissolving ten grains of platinum chloride in four ounces of water. He advises the zinc to be rubbed with very fine emery paper in order to ensure a clean surface and to apply the ink preferably by a gold pen nib. The hydrochloric acid in the platinum salt attacks the zinc, depositing the platinum on the label in a perfectly black impression that will last until long after the zinc itself has been influenced by the weather so as to be actually reduced in thickness. The writer states that he has found these labels to be perfectly legible after fifteen years' exposure to the weather.

Afforestation Development in Scotland.—Speaking at Edinburgh on Thursday, June 24, on National Increment through Afforestation, Mr. J. D Sutherland, of the Forestry Commission, stated that perhaps the most interesting development in forestry in recent years was the introduction of a scheme of land settlements. In the first instance, it involved the provision of dwellings for the men engaged in forest work, and with these homes the occupiers were fortified with a plot of land or a holding to give them occupation in their free time. Experience in land settlement had proved that unless holdings were large enough to give employment to the settler and his family, it was well nigh impossible to live in moderate comfort unless wages could be earned otherwise. The forest worker endowed with a home and land would obtain the essential occupation for nearly half-a-year at all events, and ultimately for a longer time. Through the process of obtaining land for planting, the Commissioners were enabled to create these land settlements at a moderate cost, and the allotment of settlers was generally five for every thousand acres of forest. By the end of 1926, about one hundred holdings of the type would be occupied in Scotland. As an example of the effect upon rural life, Mr. Sutherland instanced the position on Loch Ness-side. Here, during the last six years, the Commission had become possessed of 18,500 acres of deer-forest land. Upon entry, the inhabitants of this large area numbered only five. By the end of the year seventeen families would be permanently resident, and in addition, about one hundred were annually engaged on seasonable work.

Forest Playground in the Lake Country.—It is with great satisfaction we learn that a very large stretch of the lake country will be preserved for the enjoyment of the public, as a result of an arrangement made between the National Trust and the Forestry Commission, and made possible by the generosity of Sir Albert Wyon. By this arrangement Ennerdale and its famous peaks will be preserved with the addition of a large forest area including many delightful views.

Award of the Albert Medal.—The Albert Medal of the Royal Society of Arts for the current year has been awarded to Professor Paul Sabatier, Member of the Institute of France, in recognition of his distinguished work in science and of the eminent services to industry rendered by his renowned researches in physics and chemistry, which laid the foundation of important industrial processes.

Paeony Exhibition in Holland.—The first Paeony Exhibition has lately been held in Holland, under the auspices of the Netherlands Union of Paeony Growers, and has had a considerable success, though this flower is not so popular on the Continent as it is in the United States of America. The exhibition took place in a large hall in Boskoop; it was scarcely large enough or light enough, but the groups were arranged to the best advantage and the general effect was very fine.

Cordylines at Torquay.—At all seasons of the year the fine plants of Cordyline australis in the Princess Gardens at Torquay are a great attraction, but their attractiveness is greatly increased at the present time when the great majority are flowering with unusual beauty and freedom, as shown in the accompanying illustration, Fig. 1, which is reproduced from a photograph kindly sent us by Mr. F. G. Cousins, the Superintendent of the Public Parks at Torquay.

Investigation of Ferns.—At a meeting of the Royal Society of Edinburgh, held on Monday, June 21, presided over by Professor Sir T. Hudson Beare, the result of a critical investigation of a group of Ferns known as the Vittarieae, was described by Mr. Samuel Williams, M.Sc. The group consists of five very interesting genera, all of which are epiphytes growing in the damp forests of the Old and New World tropics. With the exception of the rare Hecistopteris pumila, all the Vittarieae possess simple, undivided fronds borne in two ranks on the dorsal surface of a creeping rhizome. The fronds are exceptional in being repeatedly forked. The rhizomes and frond bases are clothed with scales of lattice-like appearance, and the detailed structure of these is characteristic for each genus. An interesting feature in the epidermis of the fronds is the presence of cells containing long spicules of silica. The anatomy of the rhizomes shows a number of points of interest. The commonest type of stele is the dorsiventral dictyostele, but modifications of the type in the form of medullated protosteles are found in several of the genera. These latter types are regarded as being due to an arrest of the normal development, owing to a decrease in the size of the stele. The endodermis is always in the primary condition and this fact appears to be correlated with the entirely parenchymatous nature of the ground tissue. The sporangia are fairly constant in their structure throughout the group. They are formed at the bases of grooves in most of the species examined, and the stalk is so modified that at maturity the capsule is thrown back in such a way that the spores have free access to the exterior. The way in which the sporangia are distributed on the frond varies in the different genera, but the origin of the sorus is always intra-marginal. The spores give rise on germination to deeply-lobed prothalli. The antheridia and archegonia are of the normal type. From a general survey of the structural characters of the Vittarieae it is concluded thet they must be placed in any natural classification along with the complex genera including Adiantum, Cheilanthes, Pellaea, Gymnogramme and Ceratopteris.

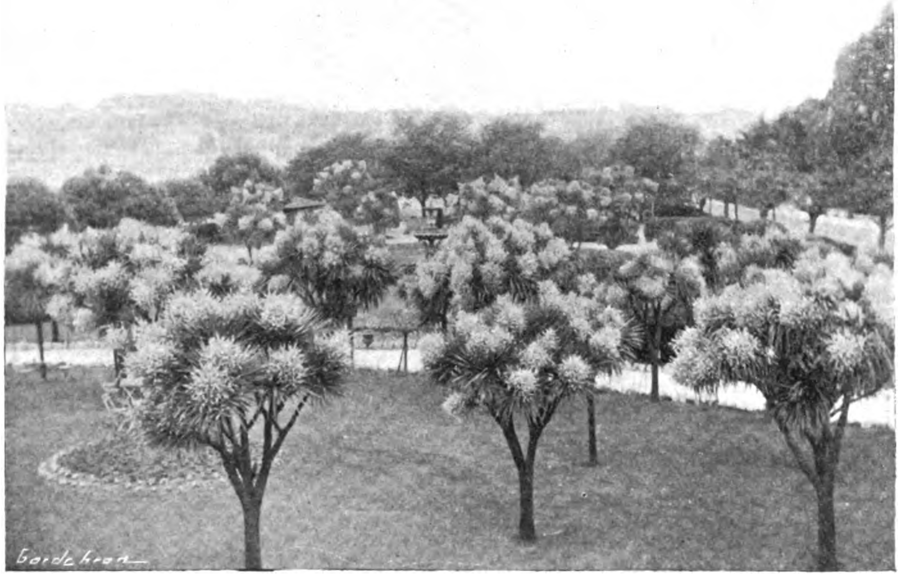


FIG. 1.—CORDYLINE AUSTRALIS FLOWERING IN THE PRINCESS GARDENS, TORQUAY.

Appointments for the Ensuing Week.—Sunday, July 4: Wakefield and North of England Tulip Society's meeting. Monday, July 5: Romsey and District Gardeners' Association's outing. Tuesday, July 6: Royal Agricultural Society's show at Reading (five days); Post Office Savings Bank Horticultural Society's show; Royal Caledonian Horticultural Society's meeting. Wednesday, July 7: Hanley Horticultural Society's show (two days); Brighton, Hove and Sussex Horticultural Society's show (two days); Reigate, Redhill and District Gardeners' Mutual Improvement Association's show; Abingdon Horticultural Society's meeting. Friday, July 9: Royal Horticultural Society of Ireland meeting. Saturday, July 10: Windsor, Eton and District Rose Society's show; Hornsey Amateur Horticultural Society's show.

"Gardeners' Chronicle" Seventy-five Years Ago.—*The late Cheltenham Flower Show.*—As one of the judges at the Horticultural Exhibition at Cheltenham, my attention has been directed to a remark in the *Cottage Gardener*, June 19, p. 174, which I quote:—"The inhabitants of Cheltenham, had a chance of establishing one of the finest shows in England, having the advantage of a heavy subscription. But they farmed the exhibition out to private speculators, who turned out one of the worst schedules that was ever printed, promised the most ridiculous prizes, cut them down after they were fairly won, and were actually threatened with law proceedings before even some of these were paid. It may be proved, but it will never be what it might have been with good management." Such a paragraph, if left uncontradicted, would be a slur on the character of the censors; I take the liberty, therefore, of submitting a statement of the case to you, along with a schedule of the prizes and a list of the rules which were put into our hands for our guidance. My fellow judges were Mr. Kemp and Mr. Parsons. It is not our business who arranged the schedule; but you, from your long standing experience, will be the best judge whether the schedule was "one of the worst ever printed," or whether the prizes were "most ridiculous." We, the censors, considered that the prizes were sufficiently liberal to induce the attendance of some of the first growers within one hundred miles, at least (as I believe the Society pays carriage of specimens); and therefore we did not think we should be doing justice to the Society if we awarded all the prizes offered; we therefore, in several instances, withheld the first prize. And if, in doing so, we erred at all, it was in being still more liberal than the articles merited. I do not believe two dozen plants could have been selected from the whole number exhibited that would have been admitted to Chiswick upon any terms. In fact, taking them altogether I never saw a more indifferent lot at any provincial exhibition; and I have often seen better plants where the prizes did not exceed one-tenth of the value of those offered at Cheltenham. Besides publishing the above paragraph, the disappointed exhibitors have circulated a report that the committee, or their officials, influenced the judges in curtailing the prizes. This is another insult both to our abilities and to our integrity. No honourable judge would allow himself to be guided by anything excepting the printed schedule and the printed rules, and by those alone we decided; it is due therefore to the public, to the committee, the exhibitors, and to ourselves, that we do declare we were not nor would we have submitted to it had the attempt been made—influenced by anything save the schedule, the rules, and our own judgment. The above is a plain statement of the matter. *William Davidson, Gard. Chron., July 5,* 1851.

The Week's Work.

THE ORCHID HOUSES.

By J. Collier, Gardener to Sir Jeremiah Colman, Bart., Gatton Park, Reigate, Surrey.

Epidendrum prismatocarpum.—There is a great diversity of growth and habit of flowering in the species of this genus of Orchids. One of the most useful and decorative species is E. prismatocarpum which usually blooms at this period. After passing out of flower any necessary repotting should be attended to. Do not disturb the roots unless it is quite necessary, when a thorough overhauling should be made. In repotting allow sufficient rooting space to accommodate the plants for at least three seasons. Specimens that have become pot-bound and grown over the sides of their receptacles, should be taken out of their pots, broken up, and after cutting away the useless back pseudo-bulbs, leaving two or three behind each leading growth, the portions should be placed singly in pots of a suitable size. The best effect is produced by placing several growths together in a moderate-sized pan, which should be filled to one-third its depth with drainage material. The rooting medium should consist of Osmunda-fibre, a few half-decayed Oak leaves, some Sphagnum-moss and crushed crocks. Make the soil moderately firm, and when arranging the young growths let two or three point to the centre in order to form a well-balanced specimen. Healthy plants that do not require repotting will be benefited by having some of the old material picked from between the roots, and given a top-dressing of fresh compost. Very little moisture should be applied to newly-potted plants for a few weeks, but whenever water is applied it should be given in abundance, taking care that it does not lodge in the centres of the young growths. Epidendrum prismatocarpum will not thrive in a close, stuffy atmosphere, and should be placed in a light, airy position in a house having an intermediate temperature.

Other Epidendrums.—Species of Epidendrum that require similar treatment to E. prismatocarpum, are E. alatum, E. fragrans, E. ciliare, and E. atro-purpureum. E. vitellinum is also a useful member of this genus. The winter-blooming variety is a bright cool-house Orchid, and is best grown in shallow pans furnished with ample drainage and suspended or placed on the stage near to the roof-glass. When well-established, this Orchid needs a liberal supply of water at the roots all through its growing period, but during its season of rest afford the roots only sufficient to keep the pseudo-bulbs plump.

THE KITCHEN GARDEN.

By F. Streeter, Gardener to Lord Leconfield, Petworth Park, Petworth, Sussex.

Coleworts.—To provide a supply of Cabbages in early autumn and winter make a sowing of Rosette and Selected Hardy Coleworts on open ground; sow the seeds thinly and net the seed-bed to protect the seedlings from the birds.

Seed-sowing and Cropping in July.—So soon as the ground is cleared of its first crops, such as Potatos, Beans, Peas, Spinach, etc., prepare it for another sowing to ensure fresh, young vegetables during the late summer and early autumn. Early and quickly maturing varieties should be chosen. Summer hearting varieties of Cabbage should be sown very thinly in rows made fifteen inches apart, and the seedlings thinned to twelve inches apart in the rows. Do not transplant these crops but let the young plants grow without disturbance; this will furnish much better results than leaving the spring bed, as is often done, to supply green vegetables. Spinach requires similar treatment. Seeds of Globe Beet sown now will furnish excellent young roots by September or October. Sow also Silver-skinned and Improved Queen Onions. Early varieties of Cauliflowers, if sown and grown without transplanting, will give excellent little heads before Broccoli is available. Other crops to be sown include Carrots of the Early Horn type; dwarf Beans, which should be sown thinly on a rich piece of ground; and Potatos, which will prove a profitable crop for supplying new tubers in the autumn.

Salads.—Such salads as Lettuce, Endive, Radish, Mustard and Cress still require to be sown once a fortnight or according to requirements.

Labrador Kale.—This vegetable should be grown in all gardens. Sown where it is to grow and thinned to fifteen inches apart it will withstand the most severe weather. Mr. Edwin Beckett considers Labrador one of the very finest of Kales, and always has an excellent breadth of it. It will thus be seen that the kitchen garden can still be cropped and made one of the most interesting as well as profitable sections of the garden generally. Continue to plant out winter Broccoli and Kales until the quantity required is growing well.

FRUITS UNDER GLASS.

By T. Pateman, Gardener to Sir Charles Nall-Cain, Brocket Hall, Hertfordshire.

Pot Cherries.—When the crop is gathered from pot trees, the latter may be stood outside to complete the ripening of the young shoots. Keep a sharp watch for black aphis, which is one of the worst pests of the Cherry, and spray the trees with an insecticide if necessary. The receptacles should be plunged to about half their depth to prevent them being blown over by strong winds. See that the roots are well supplied with water: liquid manure may be used during hot weather and the trees syringed with weak soot water.

New Vineries.—Young vines that were propagated early in the year should now be ready for planting out in their permanent quarters. Presuming the borders have been made ready to receive the young vines, a season may be saved by planting them now rather than deferring the planting until next spring. If it is proposed to take a light crop next year, it will be wise to plant a double quantity of vines and fruit only alternate canes the first season. It is surprising the number of roots these young vines will make during the next few months provided a little extra care is taken in their cultivation. This method of planting and allowing only alternate vines to fruit will in no wise affect the permanent vines, but, on the contrary, will benefit them. In planting, care should be taken at this season of the year not to disturb the roots more than is necessary in removing the drainage from the soil. Where the young vines have been grown in shallow boxes as advised, all that is needed is to remove one end of the box when the whole of the contents will slide out quite easily, and the roots will not be so congested as those that have been grown in pots. The soil in the new border should be moderately moist before planting the vines, and should any doubt exist to it being in a suitable condition of moisture, it should be watered a day or so before planting takes place. If the weather is very hot after planting, a slight shade may be necessary, but this should be removed so soon as it is found that the young vines have become established. The house should be closed as early in the afternoon as the aspect will allow, syringing the young vines with tepid water and damping all available spaces to create a moist, growing atmosphere.

Pot Strawberries.—Runners to supply plants for early forcing are best obtained from young plantations made the previous year, and they are obtainable much earlier than from old plantations: moreover such runners are stronger in constitution. There are several different methods of rooting the young plants, but perhaps the one commonest is to fill the requisite number of sixty-sized pots with a good compost, arrange the pots in alternate rows by the side of the parent plants to provide easy access for watering, and secure the runners by pegs made from dried Bracken Fern, or merely hold them in position by stones until such times as the runners become rooted. Water should be afforded the plants with care until the roots have grown freely in the new soil. Should the weather prove hot, the parent plants should be watered overhead later in the afternoon; this will be of great assistance to the young plants. Some growers layer Strawberries direct into the fruiting pots, which may result in a saving in labour but not to such an extent as to recommend its adoption.

THE FLOWER GARDEN.

By F. C. Puddle, Gardener to Lord Aberconway, Bodnant, Taly-Cafn, North Wales.

Violas and Pansies.—These plants should be examined frequently, and all withered flowers and seed-pods removed, otherwise the flowering period will be shortened and the blooms reduced in size. It is a good plan to cut back long, straggling growths on the older plants at this time to encourage the production of young shoots suitable for propagation purposes during August and September.

Herbaceous Borders.—Hardy flower borders require constant attention to keep them in good order. As Paeonies, Pyrethrums, Oriental Poppies, Lupins, Delphiniums and other early-flowering plants pass out of flower, the withered flowers should be removed before seed-pods are formed. This will conserve the vigour of the plants and often result in the production of secondary flower spikes. The plants should not be cut back unduly hard; the flower-spikes may be removed just above the highest leaves. The recent wet weather has favoured the planting of annuals and other flowers which are used for filling blank spaces in the borders. Should dry weather ensue, give copious waterings, for many herbaceous plants are very shallow-rooting and a check by drought at this time of the year will result in poor flowers of short duration. The surface of the soil should be stirred on frequent occasions with the Dutch hoe; the use of this tool is as important in the flower garden as it is in the cultivation of vegetables, for it serves the threefold purpose of keeping down weeds, conserving the soil moisture, and assists in the aeration of the soil. Staking and tying the plants will also require constant attention. Aphides frequently attack the various species of Aconitum at this season, and a close watch should be kept for these pests. Spray the plants with an insecticide immediately they are detected, for if they are allowed to spread the flowering of the plants will be ruined for the season. A. Fischeri is particularly liable to attacks of aphides.

The Rose Garden.—Roses are now at the height of their beauty, and as the blooms fade they should be cut off in order that the plants' energies may be concentrated on the production of successional flowers. Roses are greatly benefited by occasional waterings with diluted liquid manure, but if this stimulant is not available the beds may be given a light dressing of guano or some other nitrogenous manure. If this is applied immediately after the first flush of flowering is over it will materially assist the early autumn display. July is usually the month when mildew is especially prevalent on Roses, and spraying, as advised in a previous calendar, should be continued. If it can be managed, weekly sprayings at this time are advisable. Ramblers and other climbing Roses should be attended to occasionally and the strong growths tied into position so that they do not become broken or entangled in other growths.

HARDY FRUIT GARDEN.

By W. Auton, Gardener to Viscount Elveden, Pyrford Court, Woking, Surrey.

Hoeing.—Where manure cannot be obtained for mulching, the hoe should be used constantly to keep the soil fine and friable. This prevents the surface from cracking, checks loss of moisture by evaporation and greatly helps the trees to withstand periods of dry weather.

Summer-pruning.—It is generally a good plan to commence summer pruning, so far as Apples, Pears and Plums are concerned, so early as practicable to prevent useless growths from appropriating sap which is needed for building up fruit buds on the wood that is retained. As in winter-pruning, however, no hard and fast rules can be laid down. Not only do seasons vary greatly, but different varieties require different treatment, and much consideration is frequently necessary to enable the operator to decide exactly when to begin. If abundance of moisture is available in the soil early pruning is almost sure to be followed by much activity in the remaining buds, resulting in an unusual amount of secondary growths, the bulk of which would have to be removed before the tree could derive any benefit from pruning at all. Under such conditions the whole object of summer pruning would be defeated, and it may safely be asserted that excessive soil moisture is a factor for deferring pruning operations. When drier soil conditions prevail earlier pruning may be carried out with advantage. Further, trees carrying heavy crops are less likely to make secondary growths than those carrying no fruit as the crop will act as a growth-steadier by absorbing much of the energy of the tree. With cordon trees it is sometimes difficult to keep the base well-furnished with branches, and it is helpful to this end to commence pruning at the top of the tree and extend the operation over a few weeks. By so doing, the lower branches will be encouraged to make growth, and secondary growth seldom takes place.

With Red and White Currants and Gooseberries, the same principles of pruning are involved, all young shoots being stopped to four or five leaves; while Black Currants require different treatment as their future depends upon young wood being retained and encouraged to develop wherever possible. Peaches, Nectarines, Apricots and Morello Cherries come under rather a different heading, as the training and disbudding of these have been going on for weeks, and little more remains to be done until the fruits are gathered. In the case of Sweet Cherries the spurs are generally free in the quantity of young shoots, all of which may be pinched at about the fourth or fifth leaf.

PLANTS UNDER GLASS.

By JOHN COUTTS, Assistant Curator, Royal Botanic Gardens, Kew.

Hydrangeas.—These plants should be propagated so soon as strong cuttings are available. The cuttings will root readily in a close case, developing roots from all parts of the stem; they are best inserted singly in small pots. So soon as they are all rooted, the plants should be removed from the case and stood on a bench near to the roof-glass. After a few days exposure to the light, they may be potted on into five-inch pots in which sized receptacle they will pass the winter. When they have filled their new pots with roots, they should be transferred to a cold frame, where they may be carefully exposed to sun and air until it is necessary to house them for the winter. A cold greenhouse is best for this purpose, although they may be successfully wintered in cold frames, if protected from severe frosts which, combined with damp, is apt to destroy the flower buds. As the plants pass out of flower, if large specimens are required, they should be partly pruned and shifted into larger pots or tubs, standing them out-of-doors in an open, sunny position. Most cultivators desire to have at least a few blue-flowered plants, and there is no difficulty in obtaining them, as there are now several proprietary preparations offered for this purpose, which should be used according to directions.

Arctotis aureolae. — This beautiful South African Composite, with its large, orange-coloured flowers, is deserving of more general cultivation for greenhouse decoration, as it produces its flowers over a long period. The plant is generally regarded as being difficult of propagation by means of cuttings; this is undoubtedly true, but it is not generally known that it may be increased easily by layering at this time of the year. The plants may be set in the open for this purpose, or, better still, in a cold frame, where the shoots may be layered in the usual way.

FOR NORTHERN GARDENERS.

By A. T. HARRISON, Gardener to the MARQUIS OF AILSA, Culzean Castle, Maybole, Ayrshire.

Gloxinias, etc.—Older plants of Gloxinias are flowering freely, and should be shaded in sunny weather to prolong the life of the flowers. Seedlings raised in the early months of the year, which have been pricked off into pans or boxes, should now be potted, using a compost of equal parts of turfy loam and leaf-mould, mixed with sufficient sand to render it porous. Four-inch pots are usually large enough for these plants in their first season, and if grown on well they should flower in six months from the date of sowing. The same treatment should be given to seedling Generas, Saintpaulias, and others of the same Natural Order, although the two last mentioned take longer to come into flower than Gloxinias, but are of great value during the winter. The hybrid shown last season between Achimenes and Gesneria is a most interesting plant which, to denote its parentage has been named Achneria. This also needs similar treatment to that advised above.

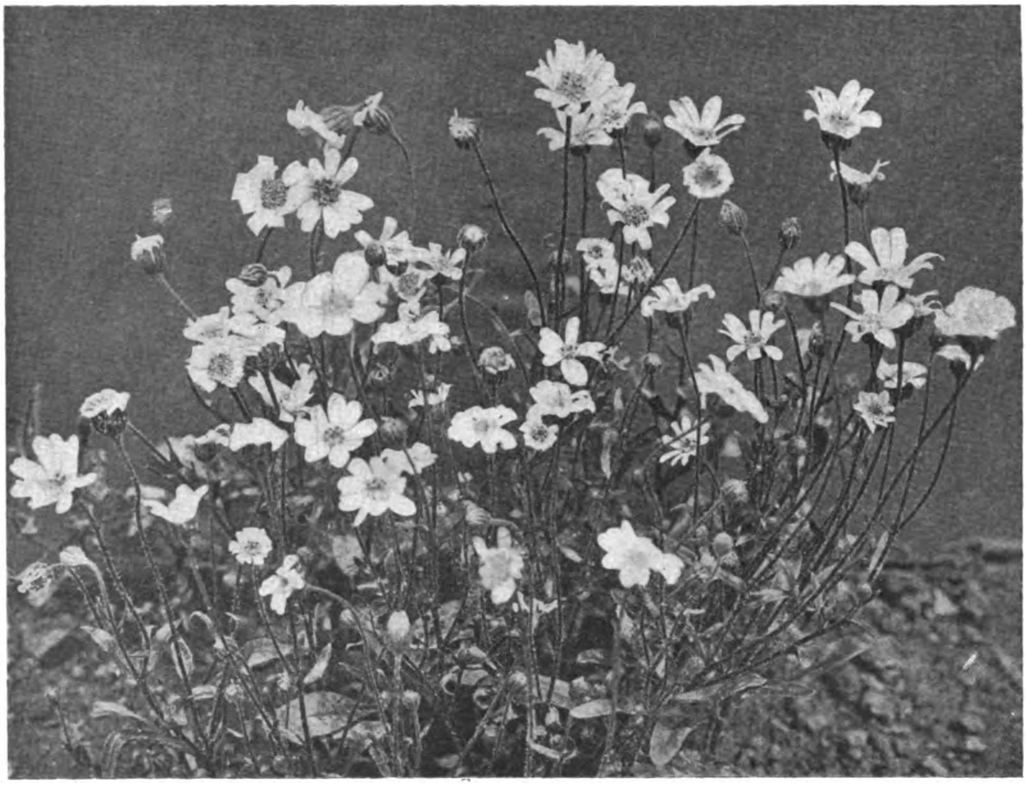


FIG. 2.—CHARIEIS HETEROPHYLLA (see p. 6.)

Begonia Gloire de Lorraine.—Cuttings of this Begonia that were rooted as advised in a previous calendar, are ready for transference to larger pots, using a compost of nearly equal parts of turfy loam and leaf-mould. Older plants which were shaken out and repotted sometime ago are growing freely and may be potted on, using pots two inches larger than those they already occupy. These Begonias resent firm potting, and the compost should only be pressed around the ball of roots and soil by means of the fingers, never using a stick to ram it firmly. Another point worth noting in the successful culture of these Begonias is their decided aversion to lime in any form, and where the service water is heavily charged with lime it should not be used, but provision made for a supply of rain water. So soon as the pots become filled with roots give the latter a mild stimulant in the form of soot-water; this will cause the foliage to be dark green and grow luxuriantly.

Thinning Hardy Fruits.—Where heavy crops of Apples and Pears have set, it is advisable at any rate, in the case of young trees, to remove part of the crop. If this is not done, the crop will either consist of numerous undersized fruits, or when the seeds form, the fruits may drop wholesale, leaving few to mature. In the case of the older trees, it is impossible to thin the fruits in anything like a satisfactory manner, but whenever possible it should be attended to so soon as it is evident which fruits are taking the lead, by removing the smaller ones as well as any which are malformed.

Humea elegans.—Seedlings of this decorative indoor plant are ready for pricking off into thumb pots, which is preferable to pricking them off into boxes, as the young plants are not then so liable to damp off. A light, sandy compost is best in the initial stages of growth, and the rooting medium may be made stronger gradually as growth proceeds. One-year-old plants are now occupying pots ten inches in diameter, and their plumes varying in height from seven feet to eight feet, should be kept erect by means of strong but slender Bamboo canes. These are useful plants for the decoration of the cool conservatory, and although I am not enamoured by their peculiar perfume at close quarters, I find that in a large, airy house the scent is more diffused and consequently more agreeable.

Endive, Spinach, and Seakale-Beet.—The first sowing of Endive should be made, and for succession two further sowings should be made at intervals of a fortnight, thus ensuring plenty of young plants for transplanting later. A dry, light soil suits this winter salad best, and where such ground is not available, good results may be had by sowing in the open now, and transferring the plants later to frames or other shelters, where, if given plenty of air at all times, they should do well. A sowing of both Spinach-Beet and Seakale-Beet made now will ensure an abundant supply of succulent leaves during the autumn; such plants will withstand the winter without bolting, and produce large quantities of leaves during the spring, when green vegetables are scarce.

ALPINE GARDEN.

AQUILEGIA VIRIDIFLORA.

This is sent as a postscript to Mr. R. E. Arnold's sympathetic notes on Aquilegias (*Gard. Chron.*, June 12, 1926). I have grown A. viridiflora on my rockery for six years, a little plant which holds its own, diffusing grace and sweetness every May. Its scent, which is that of the Honeysuckle, is especially noticeable towards evening, or when cut sprays are kept indoors. Seeds ripen abundantly, but with me never grow up into A. viridiflora ! Elsewhere in the garden are plants of A. vulgaris and the pollen from this species evidently comes freely by insect agency to the stigmas of A. viridiflora. The seedlings from the latter constantly spring up as hybrid plants displaying characters derived from both parents. This F_1 cross is especially desirable because it carries the scent of A. viridiflora in a distinct and in several ways improved A. vulgaris flower. Coming at a busy season of the year for me, I have never managed to find time to carry on this spontaneous initial effort and raise the F_2 generation. What one supposes should be possible in competent hands is the production of a scented-hybrid, true to seed. Perhaps some breeder of Columbines may be tempted to take the matter up, and crossing A. viridiflora with various species, see what he can do.

This year, A. vulgaris, retarded by the cold spell in early spring, did not flower in time to be crossed with A. viridiflora—which indeed has set no seeds. Under the conditions in my garden, I fancy A. viridiflora gives seed only when crossed—I have never had a plant of A. viridiflora from it. *F. W. Oliver.*

DIANTHUS SUPERBUS.

This fine old Pink is not seen as often as it deserves to be, for it has qualities of much merit. Though not one of the higher alpines, it has earned a reputation for unreliability as a perennial in some gardens. This, however, has not been my experience, several plants in a cool but well-drained soil having done splendidly for many years. D. superbus appears to delight in growing among other plants of a suitable nature, these preventing the ground from being parched, and at the same time giving some support to the tall and slender flower stalks. These latter are produced in a copious sheaf ; they stand upright with such sheltering neighbours as I have suggested to a height of some eight inches, and bear large, deeply-fringed flowers in white and various shades of pink and lavender. These blooms are delightfully fragrant, seed is set freely, and this provides a ready means of increase. The foliage is broad and green, and the flowering season extends from midsummer onwards for several months.

Dianthus superbus is one of the oldest species in cultivation, it having been introduced to our gardens in 1596.

AETHIONEMA CORIDIFOLIUM.

Often listed as Iberis jucunda, this is a remarkably beautiful species, and one which I have found more permanent and satisfying than many of its kind. With its roots wedged between stones on the top of a very dry retaining wall, with a gritty, poor soil at its back, A. coridifolium has prospered for several years, and every May and June it makes a large mass of its peculiarly soft yet full-toned rose-pink flowers in dense, well-rounded heads. The rather narrow leaves are a decided blue-grey, and the plant, when in full bloom, stands about six inches high. Like most of its race, this species enjoys lime in the soil, and it is essentially a sun-lover.

The true A. coridifolium does not appear to be common in gardens, possibly on account of the general similarity which it shares with A. grandiflorum, A. pulchellum and various hybrids. Though a native of Palestine, it seems quite hardy under such conditions as I have described. *J.*

HARDY FLOWER BORDER.

CHARIEIS HETEROPHYLLA.

There are so many attractive South African Composites that the foot-high Charieis heterophylla (Fig. 2) receives comparatively little attention at the hands of gardeners nowadays. Formerly, under the title of Kaulfussia amelloides, it was more popular than at present, nevertheless lovers of hardy annuals still prize it for the blue flowers it produces so freely. Plants may be raised by sowing seeds in pans in gentle warmth in March and planting out the seedlings in May, but quite good results follow the sowing of seeds in the open in April, provided the gardener and not the slugs carry out any thinning necessary when the seedlings are sufficiently advanced. As blue is a fashionable garden colour at present, it seems likely that Charieis heterophylla may become more popular. It is of neat habit and its flowers are long-lived, but, being a native of South Africa, it must have a place in the sun if it is to do itself justice. It does not despise poor soil but prefers and deserves somewhat better treatment. There is a variety with deeper blue flowers than the type and this is generally listed as var. atrocoerulea.

ROMANZOFFIA.

Romanzoffia sitchensis the Sitka Water-leaf in general appearance resembles Saxifraga ranunculifolia, so much so, indeed, that many cultivate the former plant under the impression they have the latter.

It thrives in the marshy, steam swilled flats at the margin of a bog, or in a shady, damp part of the rock garden, forming dense tufts of fleshy, kidney-shaped leaves, with short racemes of attractive white flowers.

R. Suksdorfii is a taller-grower, with green, cool-looking foliage, and branched spikes of starry, white flowers.

R. missouriensis forms a level carpet of bronze-tinted, Ivy-like leaves, one inch across, and from four inches to six inches high. The many-flowered heads of white flowers nestle amid the tangle of foliage.

ASTER ALPINUS.

When flowering in the mass the alpine Aster is scarcely less brilliant in effect than the earlier-flowering vivid-coloured Aubrietia. The range of colour includes shades of purple, blue, rose, lilac, and the white A. a. albus magnificus. In the type the flowers are one inch in diameter, bright purple, with a golden disc.

Of the several varieties, the most showy include the large-flowered loose-petalled Fire King, the robust-growing, lilac-coloured himalaicus, the violet-coloured, orange-centred subcoeruleus, roseus, rubra and speciosus, with purple flowers, three inches in diameter.

Aster alpinus forms a spreading mat of deep green, strap-shaped foliage about six inches high, and may be used effectively to drape a rock face in the rock garden, form an edging in the hardy flower border, or be grown in the reserve garden for cut flowers.

The plant thrives in the full glare of the sun and may be increased by division or from seeds. *Fred W. Jeffrey.*

FLOWER GARDEN.

SALVIA HARBINGER.

Here is a plant which is capable of wending its own unaided way to the pinnacles of fame if only it is given fair play. The qualifying remark is not a hint that the plant requires cultural treatment differing essentially from the ordinary methods of growing Salvia splendens ; it means rather that the whole future of Salvia Harbinger depends upon growers and distributors keeping the stock absolutely pure and true.

Arguments have been heard as to whether the variety is entitled to be known as Harbinger, or by some other name, and it is a fact that certain stocks exist which are identical with the Harbinger of Messrs. Watkins and Simpson, but which are labelled with some other name. At the moment, that point may be ignored as being of less importance than the serious fact that instances have cropped up where people who saw those fine beds at Wembley, or who have read about the superior merits of Harbinger have sought plants from some vendor who has sold quite ordinary stock of Salvia splendens or Pride of Zurich as being Harbinger.

The outstanding distinction of the new variety is that it makes a close, bushy plant very rapidly, and flowers at every point much earlier in the season than any other, and that is the only thing for which it is so much needed in British bedding schemes. The drawback to some of the older stocks is that a plant will run up one early flowering head, which makes a streak of colour for a brief space, and then will produce nothing but green foliage throughout the best part of summer, coming into full bloom only at the tail end of the season, when it is probably cut off by a snap of autumn frost.

Obviously, if an ordinary stock of this description is supplied by some careless vendor, the sequel will be that the disappointed purchaser will conclude that the vaunted superiority of Harbinger is unjustified, and such conclusions will find verbal expression to the detriment of the real plant's future. The best means I can suggest of securing genuine stock is to purchase seed from a reputable firm who will guarantee it to be true to name, and from selected plants of this batch the stock may be perpetuated.

The fact that plants from seeds sown in January or February will flower in summer is well established, nevertheless, plants from an August sowing, grown steadily on into forty-eight-sized pots, make covetable stock for early bedding schemes.

ERYSIMUM LINIFOLIUM.

Among seeds to be sown before July has run its course, a pinch of this lavender-coloured, spreading Wallflower may well be included ; it is a plant which deserves closer attention than is generally accorded it, for whether in a clump on the rockery, or in a bed to itself, it is prodigiously free-flowering.

It is sometimes known as Cheiranthus linifolius and, like most Cheiranthi, this little species is prone to vary both in stature or habit of growth and in size and shade of colour of its flowers. A little weeding out of its seedlings, selection, and propagation by cuttings of the best forms, from which seeds can subsequently be saved, will soon furnish a good stock.

It is one of the plants which may be grown in the poorest, driest and most exposed situations in a garden, and an old wall may be well clothed by simply mixing some seeds in wet, sticky soil and throwing handfuls into the crevices between stones or bricks.

Whenever the old flower-heads begin to make the plants look shabby, the shears may be used to tidy up the plants, and very quickly another crop of bloom will develop. *A. J. Macself.*

BOG GARDEN.

SAXIFRAGE AIZOIDES.

There is always a singular charm about this Saxifrage, whether met with by an alpine stream, fringing a moorland sheep-drain in northern Britain, or in the bog-garden. Here it grows abundantly along the brink of a small rivulet where the soil is often waterlogged in winter, and there it is one of the earliest subjects to brighten up the spot with its glossy-green, fleshy leaves and to put forth those golden-yellow, red-freckled stars with orange anthers which are yielded in profusion for the greater part of the season. A very striking form of this species is that usually listed as S. atrorubens, in which the flowers are a mahogany-red tending to vermilion. There is also an orange variety (aurantiaca) which flowers later. S. aizoides may be planted with confidence in almost any moist soil in full sun. As companion plants for it, I have S. Sibthorpii, Angallis tenella, the lovely Wahlenbergia hederacea and Gentiana Pneumonanthe. *J.*

TREES AND SHRUBS.

JAMESIA AMERICANA.

THIS shrubby member of the Saxifragaceae, although an old garden plant, is but seldom seen. It forms a bush several feet in height and width.

The many-flowered clusters of small, white blooms are freely borne at the top of the previous season's growths. The leaves are prominently veined, shining green on the upper surface, the under side being covered with soft grey hairs. When defoliated the plant presents the appearance of a bundle of withered twigs, the old, terete stems casting the bark in flakes.

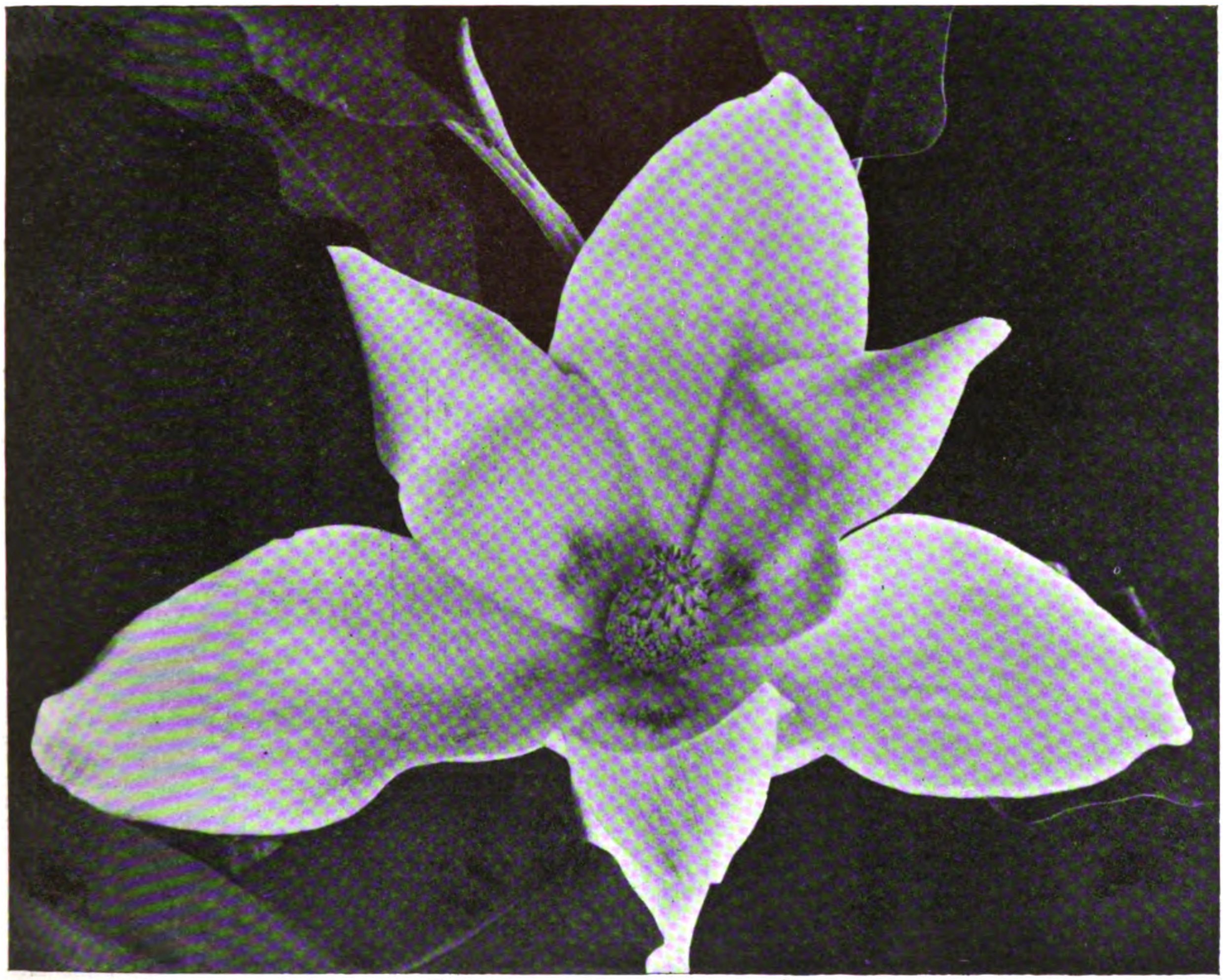


FIG. 3.—MAGNOLIA MACROPHYLLA.

CYTISUS REVERCHONII.

FOR brilliant colour effect this is one of the best of the May-flowering Brooms. The green-washed, whip-like growths, smothered with wide, winged, yellow-petalled flowers seen at some little distance, glow with an orange or old gold shade, the effect being heightened when the plant is seen against a dark background. This essentially sun-loving shrub should be given a warm, yet fully exposed position. *Fred W. Jeffery.*

FABIANA IMBRICATA.

THIS dwarf shrub bears a striking resemblance to Erica, but it is a member of the Solanaeea. It has proved to be quite hardy here, in Gloucestershire, but should not be planted in exposed situations, and is decidedly favoured when given the shelter of a wall.

The small, white, tubular flowers are produced in great profusion as are those of Erica, and the inflorescences greatly resemble those of many of the Heaths; the plant is well-furnished with foliage, which is of a lively green.

Fabiana imbricata is a good subject for the decoration of the cool conservatory.

This plant is propagated very easily from cuttings in autumn or spring.

ABELIA CHINENSIS.

ABELIA chinensis is a very fine shrub, flowering in late summer and autumn. It is best trained on a south wall and will grow and flower freely in a well-drained, sandy loam, but responds, I think, to a proportion of peat in the compost. When not in flower, the crowds of deep green leaves are very attractive. This plant rarely grows more than six feet in height. It is not very hardy and in the north requires the protection of a greenhouse, but it succeeds out-of-doors in the south and west of England.

The flowers possess a faint fragrance; they are blush-white and produced at the ends of the branches; the sepals have a brownish tinge which renders their attractiveness the more pronounced.

This shrub is very easily propagated from cuttings or layers, it makes a very pretty pot plant for the cool greenhouse or conservatory. The slender growths, with their terminal heads of small, dainty, tubular flowers, are very charming when placed in a vase.

A. chinensis was introduced from China in 1844; it is commonly known in gardens as A. rupestris, but Robert Brown's name of A. chinensis has priority. *Ralph E. Arnold, Kiftsgate Court Gardens, Campden, Gloucestershire.*

MAGNOLIA MACROPHYLLA.

AMONGST the many interesting trees and shrubs shown in flower by Sir William Lawrence at the recent Amateur Show of the Royal Horticultural Society, the most conspicuous was the flowering branch of Magnolia macrophylla (Fig. 3), indeed, it was one of the most admired of all the numerous subjects in the exhibition.

The leaves are the largest of all Magnolias, and they sometimes exceed two feet in length; they are bright green above and silvery-grey beneath; the flowers are equally large and the specimen illustrated in Fig. 3 is only about half the actual size.

The species is a native of the south-east United States, but is not common in its native habitat, and is very seldon seen in cultivation in this country. Bean states in *Trees and Shrubs Hardy in the British Isles* that the largest specimen in this country is at Claremont, where in a sheltered spot it has formed a healthy tree some forty feet high with a trunk three feet in girth.

The flowers are fragrant and consist of six dull creamy-white, fleshy segments, each five to seven inches long and about as wide. Magnolia macrophylla was introduced to this country so long ago as 1800, but it is only on rare occasions that it has been exhibited at shows. The species is illustrated in the *Botanical Magazine*, t. 2189, but the figure is not very successful, and, judging from Sir William Lawrence's specimen, the central mass of stamens and stigmas is much exaggerated in size, neither do the petals show the cup-shaped base formed by them, which is not the least interesting character of this glorious flower.

TWO FAMOUS ROSE GARDENS.

BAGATELLE.

EVERY Rosarian has heard of the Bagatelle Gardens, in Paris, where, year after year, an international trial of new Roses is conducted by M. Forestier; but comparatively few have visited the trials and the charming gardens wherein they are conducted.

The Bagatelle Gardens are enclosed, and before they were presented to the Municipality of Paris they were in the possession of an English gentleman. There is something very British in the general design of these gardens, and the large specimen trees of many kinds—Elms, Maples, Robinia, Walnut, Oak—come as a pleasant surprise after one has walked through the crowded trees in the Bois de Boulogne.

As an evening resort for Parisians, the Bagatelle Gardens are very popular, and although they are some distance from the centre of the city, they are easily reached by means of the ever-useful and cheap taxi-cabs, for which Paris is more or less famous, or a good walker may take a tram to Port Maillot and proceed through the Bois by the grand main roads or by the even more interesting bye-paths through the extensive woods.

The Rose garden at Bagatelle is a large one, and the beds are arranged in geometrical design. Rambler and pillar Roses are used extensively in the older and larger beds, and they are trained on rustic wood-work and also on iron standards. Some are trained overhead and others low down, but comparatively few look really happy. The collection of Roses—dwarfs, standards, pillars and climbers—is an extensive one, and there are also many species of Rosa grown on the outskirts of the Rose Garden.

The trials of new Roses are conducted in beds situated fairly in the centre of this Rose Garden, while the selected varieties from previous trials are planted in long beds at one end, near the Orangery. In most instances, the new varieties are represented by five plants, each set being placed in a small, circular bed cut out in the grass. Many of these small beds are included in one of the large, Box-edged beds, and although experienced visitors claim that the Roses succeed better now than formerly any Rose lover visiting the Bagatelle trials for the first time cannot fail to be disappointed with the results. The soil appears to be at fault, and the remedy for this—if really fine results are desired—is in the hands of the City treasurer. The situation is charming, the Rose garden is well-planned, and it may be viewed as a whole from a little temple which crowns an eminence close by. In addition to the need for better soil and better cultivation, it seems desirable also that the turf which covers the greater part of the soil-surface of most of the beds, should be dug in. The turf is pleasing to the eye, but if it were dug in, with suitable additions, the Roses would benefit greatly, and the Bagatelle Rose Garden might well become one of the finest horticultural features of Paris, and a Mecca for Rosarians of all nations interested in Roses and Rose growing.

On the occasion of my visit, very few Roses were in bloom, but the new Ville de Paris was producing a few of its bright flowers, and Betty Uprichard was preparing for a display. Several other Newtownards Roses, some contributed by Messrs. W. Easlea and Sons, and a few from Portadown, were doing fairly well, but there was a regrettable absence of vigour both in the new varieties and those of recent years.

ROSERAIE DE L'HAY.

SOME little distance from Paris, near Vitry, the late M. Jules Gravereaux established a Rose garden that is probably the finest in the world. He conceived the idea of a Rose garden wherein all the classes of Roses should be well represented, well-grown and set out in pleasing fashion, and being a wealthy amateur with strong horticultural instincts, he was able to materialise his idea in suitable soil and surroundings.

Passing through a charming entrance, the visitor discovers a large garden of more or less semi-circular shape, with great beds of Roses innumerable pergolas—all amply clothed with Roses, standards of varying type and size, and dwarfs by the thousand. Here, too, is a Rose terrace backed by a pergola-like arrangement, while several temples, with Roses all about them, relieve the garden from any suggestion of flatness or monotony.

In one part of the Roseraie de l'Hay a historic collection is planted for the purpose of demonstrating the origin of various classes of Roses, and here is the original hybrid raised by M. Pernet. This set and the collection of species are an indication of the care with which M. Gravereaux commenced his Rose garden, while the fine condition of all the Roses proves that he was a cultivator as well as a collector, and that his son, now the owner, is as enthusiastic and skilful as his father.

It is only possible here to give a general idea of the Roseraie de l'Hay, as an attempt to deal with varieties and species would become a mere catalogue. The grouping is as follows: in addition to the historic Roses and the species, ample room is provided for a collection of over two hundred Malmaison varieties, for a large grouping of Provence, Damask, Pompon, Moss and other Roses derived from Rosa gallica; for Oriental Roses, *i.e.*, those from India, Japan, China and varieties derived therefrom.

Further along, interest is sustained by the collection of new Roses, of varieties raised at l'Hay, of varieties tested at Bagatelle, of "Roses for Madam"—a set of varieties of special value for cutting for home decoration, and of *plus belles Roses*, *i.e.*, the finest varieties for clothing pergolas, for pillars, for beds—in short, the best for garden decoration.

The fact that Roses are not immune from pests and diseases is not overlooked, and so a section is devoted to research work, where various preventive and curative measures are tested, and observations are made with regard to budding and grafting and the use of various kinds of stocks.

By no means the least interesting part of the Roseraie de l'Hay is its museum where, with infinite patience, M. Gravereaux brought together a collection of old books on Roses, old catalogues of Roses from many countries, paintings of Roses, coloured and plain prints of Roses, textiles in which Roses provide the decorative motif, wall papers with designs of Roses, metal work, ivory, wood carving, embossed leather and other materials where the artist has used the Rose to present his art.

An hour or so is an all too brief period for inspecting this fine and justly famous Rose garden; a week would not be too long. In the height of the Rose season the garden must be a delightful place. It is a splendid memorial to its founder. Could not some British amateur Rosarian, with ample means and a suitable position, found a Rose garden on similar lines in England? Our national flower demands something of the kind, and the man or woman who will establish it will win fame and do a great service to horticulture. *C.*

INDOOR PLANTS.

CLIVIA MINIATA.

THIS Amaryllidaceous plant is attractive both when in and out of bloom, for the sheathing, strap-shaped leaves are a rich green colour and remain on the plant all the year round. The type is in itself exceedingly handsome, but in recent years great improvements have been effected in colour and size of the inflorescence. One of the most notable collections of Clivias in this country is that at Westonbirt, and many will remember the magnificent group of these flowers exhibited by Sir Geo. Holford at the R.H.S. meeting on March 23, 1926. Nothing could have been more impressive than this exhibit; each plant was of stately beauty and the flowers gorgeous in various tones of scarlet, orange and apricot.

At the meeting of the Royal Horticultural Society on March 13, 1923, Sir Geo. Holford gained three Awards of Merit for varieties of Clivia, namely Westonbirt Perfection, a deep orange variety shaded with scarlet and with a deep yellow throat: Lady Holford, a pale apricot variety with a soft yellow throat; and Field-Marshal, soft orange with a pleasing shade of yellow in the throat. Another fine variety named St. Nicholas, shown by the Hon. R. James on May 11, 1920, also received the R.H.S. Award of Merit.

Clivias, commonly known in gardens as Imantophyllums, make splendid plants for the cool conservatory or greenhouse and are well suited for planting in greenhouse borders. They are easily cultivated, but like all bulbous plants, Clivias need a season of rest which is best ensured by withholding water at the roots and so keeping the plants as dormant as possible. The specimen which forms the subject of the coloured Supplementary Illustration is one of the darker coloured forms; the type more approaches scarlet though described by Nicholson as red, and inasmuch as there is considerable yellow in the base of the interior of the flower, perhaps brick-red most accurately describes the tone.

NICOTIANA SANDERAE AND N. SUAVEOLENS.

NICOTIANA Sanderae is a beautiful hybrid Tobacco suitable for arranging in large groups in the conservatory. It is a quick-growing plant, and if seeds are sown in a cool house towards the end of June, the plants therefrom will prove very useful for flowering late in summer and autumn.

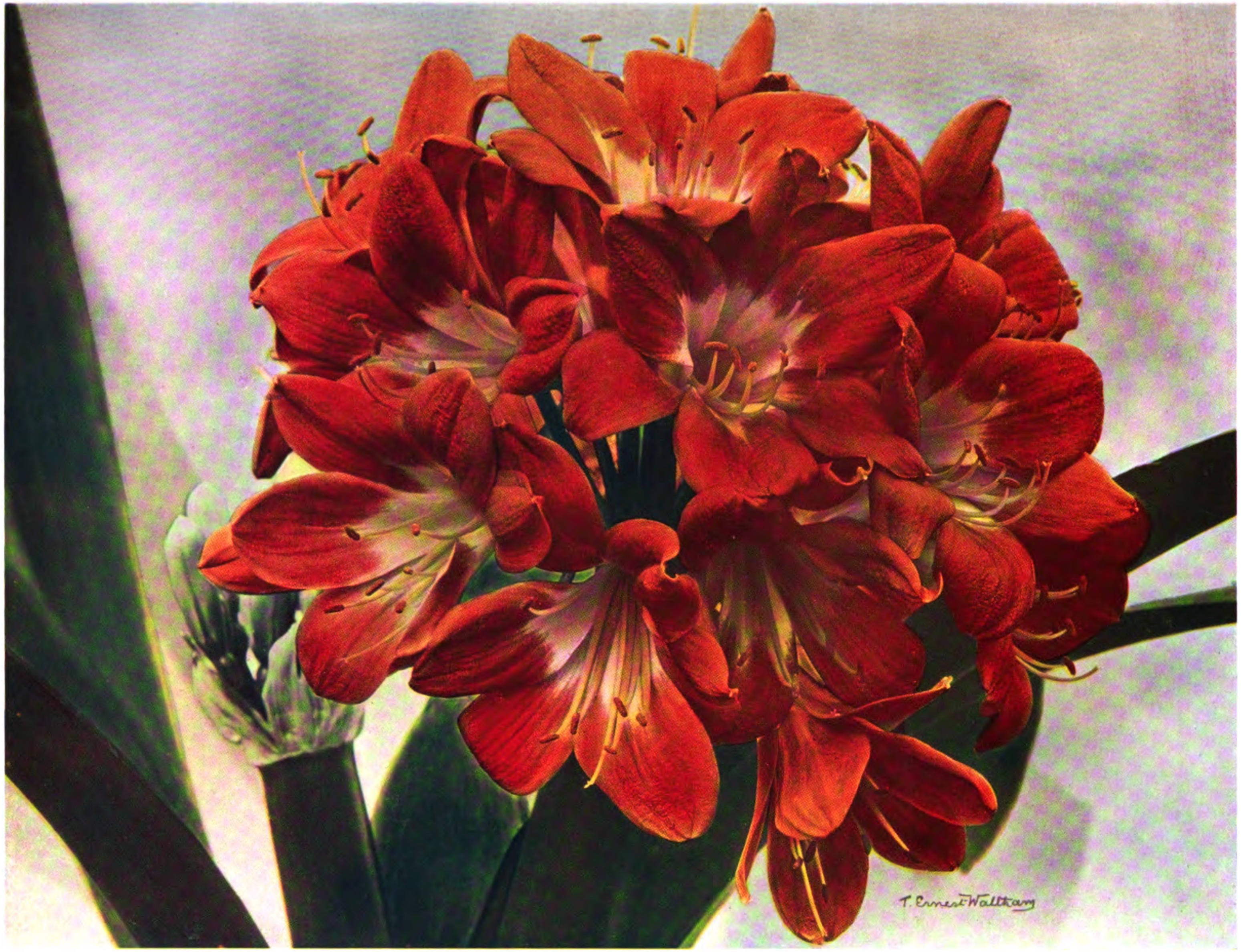
The plants should be grown on steadily in a cool house, potting them on as they require it until they are in six-inch or seven-inch receptacles. It is important to procure seeds from a reliable source, as there are many poor strains in cultivation.

Nicotiana suaveolens, is a dainty little species with small, white, tubular flowers. It is a charming little plant for furnishing the stages of the cool greenhouse. This species should be grown under perfectly cool conditions. *J. Coutts.*

HOME CORRESPONDENCE.

Can the Fruit Crop be Estimated as Judged from the Blossom and Weather in Spring?—The authorities at the Danish Experiment Station at Hornum ask whether anything has been published in England on the above subject as they would like to know of it. Does any reader remember seeing an article on the subject? This spring, in Kent, the weather was sunny, calm, warm and favourable, whilst Pears Plums and early-flowering Cherries were in flower, and these fruits seem to promise generally fairly good crops. During the period in which Apples and the later-flowering Cherries were in flower, the weather was generally dull, rainy, cool and unfavourable to insect visitors, with the result that the Apple crop generally is exceptionally short and late Cherries seem to be few. Frost in any season would upset any estimate; blossoms that have been pollenated are considered to endure a frost better than those that have not set. *C. H. Hooper, Wye, Kent.*

Early Potatos.—After reading the article on early Potatos on page 451, vol. LXXIX, I thought it would be interesting to your readers to give my experience in these gardens with some of the varieties mentioned. Our soil is inclined to be heavy, but plenty of gritty materials have been used in growing early Potatos. I find Di Vernon easily the best early Potato for yield; it is very productive and quite two weeks ahead of Sharpe's Express, Epicure, Eclipse, Immune Ashleaf and Duke of York, all of these varieties being grown side by side with it. As a table Potato it is excellent, and I have been asked to grow it more extensively. I force a lot of early Potatos and find Di Vernon still pre-eminent for forcing, and it is an ideal pot variety. I might add, that with the exception of saving seed for forcing, I save none for planting a second year, my experience being that a change of seed for early Potatos for our particular soils is essential to success. *Charles Malpass, Birchwood Grange Gardens, Penylan, Cardiff, S. Wales.*


T. Ernest Waltham

A FINE GARDEN VARIETY OF CLIVIA MINIATA

MESEMBRYANTHEMUM.

(*Continued from p.* 425, Vol. LXXIX.)

8.—CHEIRIDOPSIS, N. E. Br.

C. Marlothii, N. E. Br. (Fig. 4).—Plant as imported in its resting state about 1½ inch high, stemless, of numerous growths in a clump. Each growth consisting of a cylindric white sheath enclosing a pair of leaves; the sheath is 8-10 lines long and 3-3½ lines in diameter, shortly slit down on one side or on opposite sides at the top, and there bearing the withered remains of two short leaves, from the base of each of which a slender, acute ridge extends to the base, thin but rather rigid in consistence and snow-white in colour, without dots or marks of any kind. The enclosed pair of leaves are slightly shorter than the sheath, and, being shrivelled, do not fill it tightly, their flat faces are pressed together so as to form a beak-like body about 3-3½ lines broad and 1½ line thick, like that common to many species of this genus; surface smooth, glabrous, apparently light green or glaucous green tinged with red at the apex and along the acute keels, and distinctly dotted with darker green all over. Flowers not seen. Pedicels of the fruit ascending or very spreading with the capsule upturned from it, 8-15 lines long, with the withered remains at its base of the short growth (the so-called bracts) from which it emerged, glabrous, white. Capsule, when closed, 4-5 lines in diameter and about 3 lines deep, circular in outline, flat with a raised centre at the top, convex beneath, with 9-10 valves and cells, white until wetted: when expanded about 7-8 lines in diameter, with the valves reflexed and S-shaped in side view; expanding keels about half as long as the valves, diverging from their base, ciliate-toothed along the edges, chestnut-brown with pallid, awn-like tips; cells convexly or bluntly roofed with stiff, translucent, pale brownish cell-wings turned back at the opening like the mouth of a trumpet and the opening completely closed by a large white tubercle; near the middle of the roof each pair of cell-wings rises into a pair of stiff erect awn-like points ¾ line long, concave on the inner side at the base. Seeds several in a cell, ⅓ line long, compressed-ovoid, acute at one end, smooth, pale brown with the point darker brown.

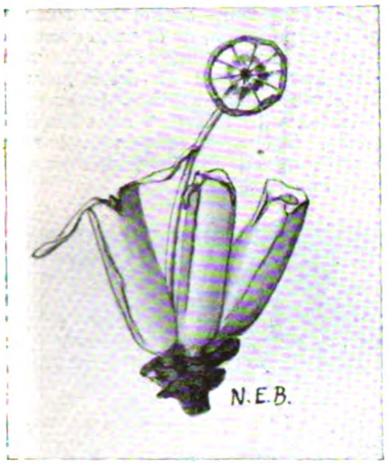


FIG. 4.—CHEIRIDOPSIS MARLOTHII.
In its natural resting condition. Sheaths and fruit pure white. Natural size.

Little Namaqualand: Locality unknown, Marloth!

In its natural resting condition this is one of the most remarkable and most distinct species in this curious genus that I have seen, and I have great pleasure in associating the name of Dr. R. Marloth (who kindly sent it to me) with such an interesting plant. The snow-white unspotted sheaths are remarkably sleeve-like in appearance, well conforming to the generic name, and are very remarkable structures, and as only just the tips of the leaves contained in them are visible, even when viewed from above, if the plant grows among white stones it would scarcely be perceived at a distance of a few feet away when in a resting condition.

Although the above description gives no account of the plant in a growing or flowering condition, I publish it because its appearance in the natural resting condition and the structure of the fruit is so unlike that of any other known species that there can be no possibility of mistaking it when seen in its resting and fruiting state, and the vegetative characters will be given later. I believe, however, that the strange appearance of this plant in its natural resting condition will never be repeated in this country, on account of the greater humidity of our climate.

The structure of the fruit, too, presents an unsolved problem, as indeed does that of the whole genus; for the capsules of all the species are fashioned on the same plan, but the tubercle in this species appears to me to more completely close the opening than in other species, so that I cannot understand how the seeds can escape from the cells; roofed as they are by stiff cell-wings, it would seem almost impossible for them to do so. Whether the curious pair of awn-like points arising from the roof formed by the cell-wings have anything to do with the dispersal of the seeds I cannot say, but I suspect that they aid dispersal in some way, for such an elaborate structure as that of the fruit of this plant and its allies is almost certain to have some connection with the dispersal and future welfare of the seeds, which certainly do get out of the capsules, as is testified by the completely or partially empty cells I find in many of the capsules, indeed, in almost all those that show evidence of having once opened on the various species I have examined.

C. Meyeri, N. E. Br. (Fig. 5).—Plant scarcely an inch high as imported, tufted or forming small clumps. Growths when at rest more or less crowded, each consisting of an orbicular or orbicularly obovate, erect body, 4-6 lines long, 3½-5 lines broad and 1½-2- lines thick, with acute edges and appearing quite entire without visible orifice or fissure, and covered with a white skin having a slight acute ridge down the centre of the apical part on each side (Fig. 6 A). When vegetative activity is resumed, the skin bursts, a new growth appears (Fig. 6 B and C), formed of a pair of opposite leaves united at their base, 5-6 lines long, 2-2½ lines broad and 1¾ -2 lines thick at the base, dilating to 3-3¼ lines thick at the upper part, flat on the face and there tapering gradually from the base to a subacute apex, keeled all down the back, not apiculate, entire; surface mooths, glabrous except at the microscopically ciliate edges, green or brownish, inconspicuously (not so distinctly as shown in the figure), and somewhat thinly dotted with darker green, and the dots pellucid when viewed against the light. Succeeding this pair of leaves is a second pair united for most of their length into a solid, ellipsoid body 4-5 lines long, 3 lines broad and 2½ lines thick, keeled over the top and slightly and abruptly compressed at the apex as if pinched there between the finger and thumb (Fig. 6 D.), coloured like the other leaves, not at all glaucous. At its base two similar but smaller bodies afterwards develop. All these bodies ultimately pass to rest and become as shown in Fig. 6 A. Flowers not seen. Pedicels of the fruit solitary, terminal, 4-7 lines long, ascending or spreading horizontally with the capsule abruptly upturned, each with the withered skin of a pair of leaves or bracts at its base, glabrous. Capsule when closed 4-5 lines in diameter, 2 lines deep, flattened above and beneath, circular in outline, glabrous, white or pale brown, with 10-11 valves and cells; where expanded 7-8 lines in diameter; valves about 2 lines long and 1¼ line broad, pallid, with orange-brown expanding-keels, contiguous at the basal part and diverging above, toothed along the edges, with awn-like points; cells acutely roofed with stiff, pale brown cell-wings that are raised into a hump towards the centre of the capsule, and the opening nearly closed by a large white tubercle. Seeds many in each cell, less than ½-line long, ovoid, acute at one end, smooth, light brown.

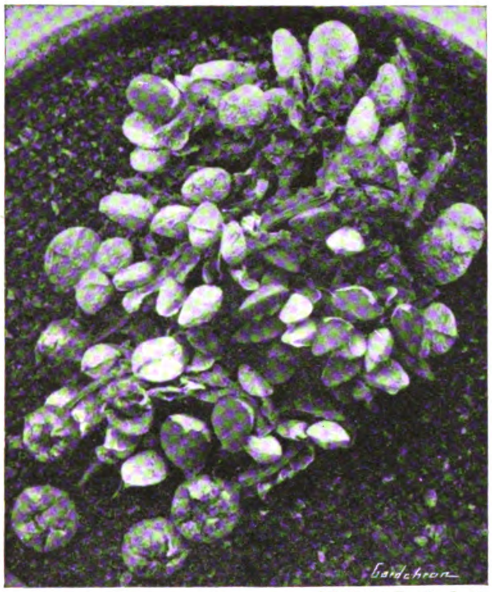


Photo by Fr. de Laet.

FIG. 5.—CHEIRIDOPSIS MEYERI. N. E. Br.
In young fruit. Nearly natural size.

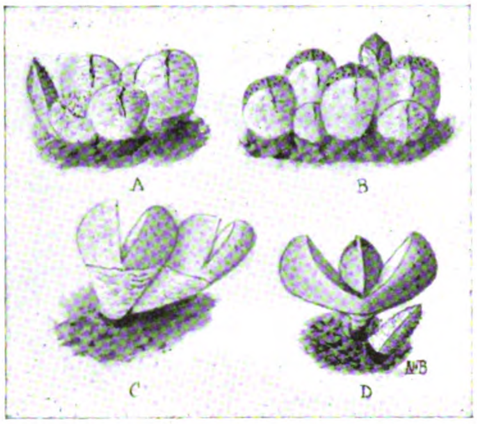


FIG. 6.—CHEIRIDOPSIS MEYERI.

A. Plant at rest, as imported. B. New growths bursting through the old skins. C. Two growths further advanced, showing the first pair of leaves to be separated nearly to the base. D. Showing the formation of the second pair of leaves, which are united almost to their tips into a solid body. The first pair of leaves wither and disappear and the second pair go to rest, becoming as shown at A.

Little Namaqualand: Near Steinkopf, Meyer! Marloth 6592!

This very distinct and remarkable species is quite unlike any other known to me. Living plants of it have been sent to me by Dr. R. Marloth, who informs me that it was discovered by the Rev. G. Meyer, after whom I have named it.

Seen only in the resting state very few would associate this curious plant with C. rostrata, C. bifida and similar plants placed under this genus, for when in its withered whitish skins it might be mistaken for some much compressed member of the genus Conophytum; the structure of its capsule, however, at once proclaims it to be a species of Cheiridopsis, and a view of the new growths that burst through the white sheaths at once remove all doubt as to its affinity. In having a sheath entirely closing the new growth it shows some alliance with C. peculiaris, N. E. Br.

The hump on the roof of the cells formed by the cell-wings is evidently a more rudimentary development of the erect, awn-like points on the roof of the cells of the capsule of C. Marlothii.

Fig. 5 is from a photograph of an imported plant in a resting condition, about three-fourths natural size, which has been kindly sent to me by M. Franz de Laet. *N. E. Brown.*

(*To be continued.*)

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NEW TIBETAN SPECIES OF PRIMULA.

IT is often said, and not without truth, that government departments are slow to move, but that charge cannot be laid at the door of the Royal Botanic Garden at Edinburgh, for the *Notes* recently issued thence* contain an enumeration of the species of Primula—new and old—found by Captain F. Kingdon Ward in his first journey to the gorge of the Tsangpo river, a journey which began in March of 1924 and ended only sixteen months ago. In the interval, the collection of Primula species has been investigated by Professor W. Wright Smith in conjunction with Capt. Ward, and the enumeration already referred to is the result.

Of the fifty species of Primula collected, no less than a quarter are new, and of these some have already flowered in this country, so rapidly do we move in these matters nowadays! Horticulturally, the most interesting of the new species promises to be P. Florindae, which is in cultivation in many directions and was publicly exhibited in flower at the recent Chelsea Show.† It belongs to the Sikkimensis section, and is distinguished by the peculiar size and shape of the leaves—in the wild plant, longer and wider than the hand—and the long stalks or petioles on which they are borne. The fragrant, sulphur-coloured, nodding flowers, which number from thirty to forty in some wild plants, are borne in an umbel on a stem as much as a yard high, and the whole inflorescence is powdered with white meal. Ward found the species in large colonies at 12,000 feet in the Rong chu basin, south of Tumbatse in South-east Tibet, "in shady bogs and by or in running streams"; he gives the distribution of it as from the upper end of the Tsangpo gorge, westwards on both sides of the river for perhaps one hundred miles, and northwards almost to the southern foot of the Salween Divide, so its range is not extensive. The wild plant flowers in June and July, and if this tardy habit is maintained in cultivation, this Primrose will materially help to prolong the flowering season of the genus.

Though obviously a marsh plant, no one can yet say much about the cultivation of this species, which may prove a desirable garden plant, or in our soft climate may develop into a coarse-growing Primrose. Home-grown plants have not reached maturity yet, nor are they likely to for a time, and until the plant has had opportunities of showing what it can do in this country, the criticism passed on it at Chelsea, that it is a coarse edition of P. sikkimensis, is premature. Not everyone can keep that refined species for long, but if appearance goes for anything, P. Florindae has the constitutional vigour the other often lacks, and should be perennial.

P. chionota is also a moisture-loving Primula, but of a totally different character, for it is a dwarf of the Petiolaris section, of which P. Winteri is a familiar example. The flowers are large and pale yellow with a distinct orange eye. That beautiful, but from the outdoor cultivators' point of view, intractable section, Soldanelloides, received a recruit in P. Cawdoriana, which Ward found "on steep, rocky earth slopes on the sheltered side of the cliff and on alpine slopes among dwarf Rhododendron, Cassiope, etc.," at 14,000-15,000 feet, in South-east Tibet. It is a dwarf plant with nodding, violet-coloured flowers as much as one-inch-and-a-quarter long in the tube and peculiar in that they are on one side of the stem. It shares this odd and rather ungainly habit with several other Tibetan Primroses. Though young plants of the species are growing apace, they do not strike the eye as likely to outlive many British winters in the open, but it will doubtless prove its quality in a cold house.

P. Baileyana is another Wardian species which, while happy at present, seems likely to try the expert's skill in the rock garden. It is an attractive little plant of the Rotundifolia section, and comes off the 15,000 feet level, "under a large boulder, on cliffs and grassy slopes among dwarf Rhododendron, etc., in sheltered gullies in very sandy soil." The sharpest of sharp drainage is clearly indicated, but unfortunately, with this group, this seems to avail little in our winter climate when the roots are dormant.

Not the least interesting of the many observations made by Ward on his Tsangpo expedition was that in the comparatively small area of Tibet he and his companion traversed they found three distinct climatic regions each with its own flora. Of these the first was the high semi-desert plateau almost devoid of ligneous vegetation but with a subarctic and central Asian flora of its own. Comparatively few species of Primula were found in this area. In the second region—one of Coniferous forests, thick shrub and a varied herbaceous flora—the majority of the Primula species occur and here the winters are dry and the summers wet, the snow lying late and the rains beginning about mid-June. In this region the Primula season is in June and July.

The third region, in which the Primula genus is far less conspicuous than in the second, is one of perpetual rain—winter and summer—as in the Tsangpo gorge, or of winter snow and summer rain as in the alpine belt. The vegetation of the last consists of dense growth of dwarf or scrub Rhododendron, passing at a lower elevation into mixed Conifer-Rhododendron forests. The area of perpetual rain is covered with mixed forests which pass into sub-tropical forests below.

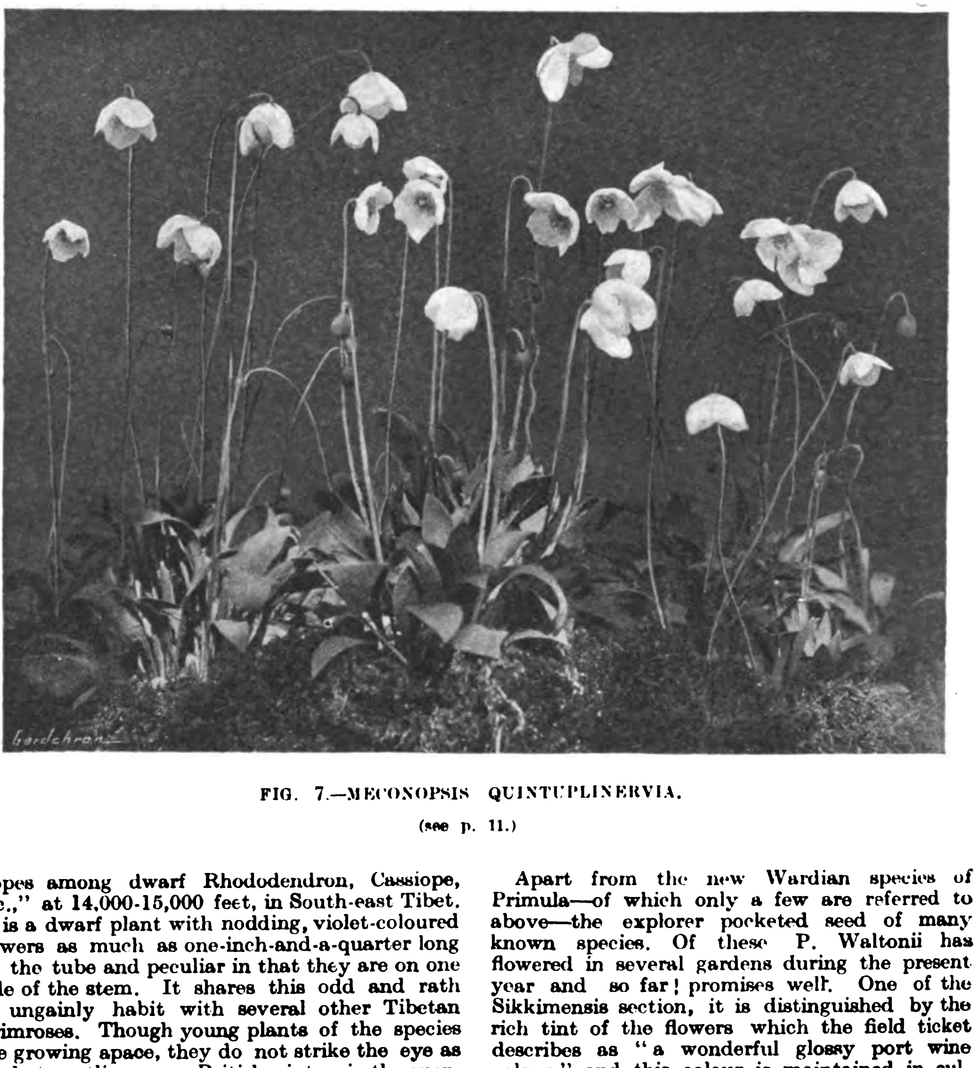

FIG. 7.—MECONOPSIS QUINTUPLINERVIA.

(see p. 11.)

Apart from the new Wardian species of Primula—of which only a few are referred to above—the explorer pocketed seed of many known species. Of these P. Waltonii has flowered in several gardens during the present year and so far! promises well. One of the Sikkimensis section, it is distinguished by the rich tint of the flowers which the field ticket describes as "a wonderful glossy port wine colour," and this colour is maintained in cultivated specimens. The flowers are fragrant and powdered on the inside with farina. Ward found P. Waltonii in alpine meadows and bordering small streams on the high plateau at 13,000-14,000 feet, and though growers have yet to see how the species will fare in our winter climate it seems likely to be as easy, or as difficult, as P. secundiflora, to which, though of more robust habit, it bears a superficial resemblance.

To Ward also we owe the plants at present in cultivation of another of the Sikkimensis group, P. microdonta, Franchet, which he came across "in shady bogs, sometimes growing with the large Cowslip Primula No. 5,781 (P. Forindae)." As Ward saw it in August (1924), this is another late-flowering Primrose, so that it should be especially welcome. The type plant has white flowers in three or four whorls on stems about three feet high, and they are some times stained with violet or sulphur-yellow. P. alpicola, which Ward called the Moonlight Primula, is a new variety of P. microdonta. The petal tint varies from pale Primrose-yellow to a vinous shade, and the flowers are "extremely fragrant with an exotic fragrance." The plant is in cultivation and received an Award of Merit when exhibited by Lady Aberconway at Vincent Square on June 18.

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* *Notes from the Royal Botanic Garden, Edinburgh*, vol. XV., No. LXXII.

† For illustration see *Gard. Chron.* June 5, p. 399, fig. 205.

The germination of the Primula seed gathered in Ward's expedition of 1924-25 has been unusually high, and this is doubtless due as much to the careful methods of handling and despatch as to anything else. It is an important factor in the search for the conditions under which these Tibetan species can be induced to take root in this country, for when germination is high and a grower has a score or two of a new species of a plant, he is more likely to discover the conditions congenial to it than if he only has a few. Little can be done without experiment. *A. Grove.*

PLANTS NEW OR NOTEWORTHY.

GILIA CALIFORNICA.

THIS beautiful species (Fig. 8) received an Award of Merit in 1925. It is figured in the *Bot. Mag.*, in 1855, t. 4872, under the name Leptodactylon californica, where the information is given that the plant bloomed in the open border in Messrs. J. Veitch and Sons' nurseries, both at Chelsea and Exeter, where it formed a low shrub remarkable for its beauty.

This is one of the few perennial members of the genus, and the only one that is shrubby. In its native habitat it forms bushes three feet to five feet in height, practically covered with its large, delicate-pink flowers. It is easily raised from seeds which germinate in a few days, and the plant flowers within six months. It is also readily propagated from cuttings, the rooted cuttings flowering when an inch or two in height.

While Gilia californica may not be able to withstand a great deal of frost, it should succeed against a warm wall, and may be quite safe in a warm corner. It is most impatient of heat and is happy when in a cold frame or unheated house. My plants suffered during the winter from fogs but are now recovering. *T. Hay.*

MECONOPSIS QUINTUPLINERVIA.

THIS plant, for the introduction of which into cultivation we are indebted to the late Reginald Farrer, is of such exquisite grace and charm that its scarcity in gardens is to be regretted. Farrer found this species on the alps of the Da Tung chain, at 9,000 feet to 13,000 feet elevation, and gave a lengthy description of its beauties in *Eaves of the World*, (vol. 2). He suggested that it should be known as the Harebell Poppy.

Meconopsis quintuplinervia is quite hardy and a sound perennial. From a clump of crowded, hirsute, grey-green foliage spring slender stems bearing solitary flowers, and rising to a height of twelve to eighteen inches. These flowers are of a particularly delicate shade of blue-grey, pendent and bell-shaped, opening under the influence of sunshine and disclosing the crowded, white anthers. The leaves die down in early winter, and the succeeding year's growth is packed into tight crowns, quite unaffected by snow and rain.

The following cultural suggestions are based upon experience with this plant in the south of England and in Scotland. In Scotland the species is quite easy of cultivation, provided it is not allowed to suffer from drought, or, on the contrary, planted in a bog. Lime in any form is detrimental. An open soil containing plenty of leaf-mould and sandy loam suits it admirably. The aspect should be westerly, or one shaded from mid-day sun. Under these conditions, with the cool, moist nights experienced in Perthshire (with an annual rainfall in these gardens of about sixty inches) the plants form clumps a foot through.

Southern growers will not find this plant quite so easy to deal with. In common with all other Asiatic species of Meconopsis, it seems to object to drying, summer winds. However, by selecting a moist position facing west, and supplying water during dry spells, it is quite possible to grow presentable specimens.

The Harebell Poppy spreads by means of short, underground stolons, which may be detached easily, with roots, and form a ready means of increasing the stock. Old plants become congested in a few years. If lifted and divided in the autumn, and wintered in pots in a cold frame, good specimens will be available for spring planting.

Captain Kingdon Ward's remarks on this plant in *The Gardeners' Chronicle* of June 19, are to be regretted, as he "damns with faint praise" a plant which amply repays careful cultivation. No plant-lover who has seen a colony of M. quintuplinervia with the pendant bells swaying in the breeze would wish to be without it. The plants in these gardens have been in the possession of Mrs. Walter Jones for over ten years, and from the original dozen examples received from Farrer there are now over a hundred good specimens. This does not indicate a need for periodical re-introduction, neither can the plant be described fairly as "lingering." As for its seed-bearing propensities, there is a batch of plants here raised from home-grown seeds sown early this spring.

The plants from which the photograph (Fig. 7) was taken were grown in the open entirely unprotected. *Fredk. Brooker, Aberuchill Gardens, Perthshire.*

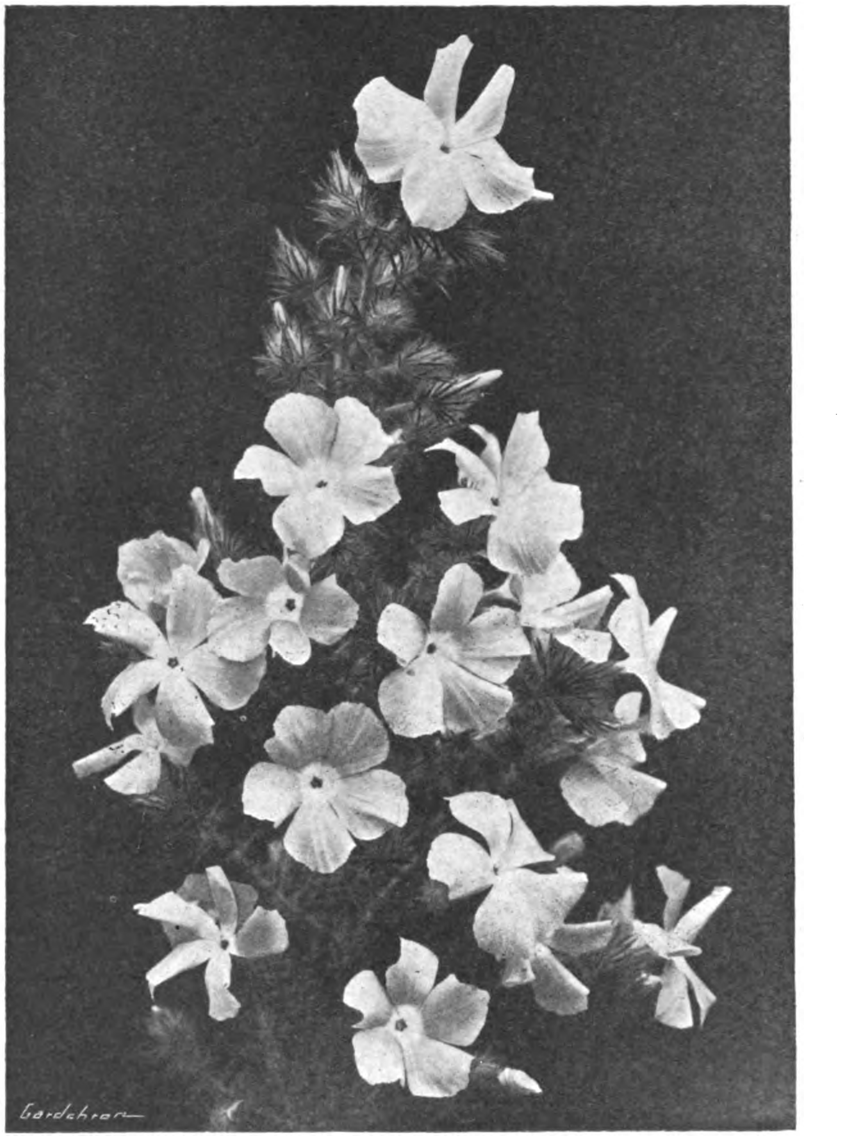

FIG. 8.—GILIA CALIFORNICA.

VIOLA SPECIES IN CATALOGUES AND LISTS.

I AM beginning to doubt if there is any genus other than Viola in which the nomenclature has become so hopelessly involved. I have not added them up, but a rough calculation tells me that for round about one-hundred-and-thirty European and Near Eastern species of Viola—that is, excluding American, Australian and Japanese species, and the few that have recently come out of Central China—there are nearly 1,200 synonyms. It would almost appear that every European botanist, whenever he came across a Viola new to himself imagined that it was incumbent on him to coin a new specific name.

A great deal was done by Becker, the monographer of the genus, between 1900 and 1910, to reduce chaos to order. I write of him as the monographer of Violaceae, but in reality a monograph is still awaited, as Becker's researches were scattered throughout numerous articles in a number of botanical journals, as well as in separate publications dealing seriatim with the Violas of Switzerland, Bavaria, and Tyrol. These articles are now difficult of access, and, in addition, are written in so polyglot a manner that it is a severe test of one's patience to arrive at sense out of the German and Latin with occasional French, Italian or even Spanish or Slav which Becker hurled at his readers

At the same time, I am convinced that no revision of the genus will be sound that does not embody the work of Becker, and it is a great pity that Farrer's enlightening résumé of Violas in *The English Rock Garden* does not incorporate the earlier researches. To take an illustration from *The English Rock Garden* and the Kew *Handlist of Rock Garden Plants* 1925:—Farrer describes V. bosniaca. Kew gives V. bosniaca, Formánek, as a synonym of V. declinata, Waldstein and Kitaibel. Farrer gives V. declinata as a synonym of V. Dubyana. He also gives V. heterophylla as a synonym of V. Dubyana. Kew gives V. heterophylla as a synonym of V. gracilis var. valderia

There are, in fact two distinct species embodied in this medley: V. elegantula, V. declinata and V. Dubyana belonging to the Cornuta section; and V. heterophylla and V. gracilis belonging to the Calcarata section.

V. elegantula was first described by Schott in 1857, then in 1887 Formánek coined the name V. bosniaca for the same species. Formánek seems to have had doubts about it, however, for in the following year he relabelled it V. declinata, Wald. and Kit., var. bosniaca. This species extends from Albania northwards into Bosnia and Dalmatia. It is now common in cultivation under the name of V. bosniaca. but, in view of the confusion I imagine the only practicable thing to do in all cases is to follow the strict rules of nomenclature and hark back to the names of the original describers. In any case, it is one of our very finest species, with its peculiar fiery glow which, attractive as it is in daytime, especially with the sunlight shining through it, is particularly arresting on the dinner-table with its colour "lit up" by electric light. V. elegantula bids fair to become as important as V. gracilis, and hybrids, which may or not be improvements, are making their appearance. A particularly beautiful hybrid, which, I understand, will soon be on the market, was that shown in the forefront of Mr. Whitelegg's rock garden at the recent Chelsea Show.

V. declinata, Wald. and Kit., takes up the tale northward of V. elegantula, and stretches from Roumania through Transylvania and Hungary into Poland. The differences between this and the last are mainly botanical and not of importance to gardeners, though I imagine V. declinata is smaller and generally of less practical value than V. elegantula. V. declinata appears here and there in catalogues, and if any one desires to distinguish the two species, the spur is the easiest diagnostic, that of V. declinata being curved and barely exceeding the calyx appendices in length, while the spur of V. elegantula is straight, and at least twice the length of the appendices.

V. Dubyana, Burnat, is again one of our very finest Viola species. *The English Rock Garden* gives an adequate description of it under this name, and there is also an excellent photograph of it by the late R. A. Malby opposite p. 456 of the second volume. V. Dubyana on the long crest of the Cima Tombea at the end of June is a thing to wonder at. There are two colour forms there, one violet, the other claret-tinged. It grows in bare patches of soil amid the hummocks of Primula spectabilis and Linum austriacum which cover the ridge. I sometimes wonder if Farrer saw it in bloom, as I imagine he was on the Tombea earlier—when P. spectabilis was at its zenith—and he nowhere mentions the two colour forms, and, in addition, he classed V. Dubyana with the Cenisias. The habit and growing-place of these two are distinct at a glance. The Cenisias are obviously scree plants, V. Dubyana is not—it is almost a turf plant. It has been a matter for frequent comment that V. Dubyana is relatively easy as compared with the Cenisias, and I suggest that the explanation of this seeming vagary lies in the fact that V. Dubyana belongs to the Cornuta group.

V. heterophylla is quite distinct from V. Dubyana. The former, as indicated, is a Calcarata, and the latter a Cornuta. I have an idea—it is really only a guess—that Farrer used Haussmann's book on the flora of Tyrol and Haussmann used the name V. heterophylla for V. Dubyana. Originally V. Dubyana was the var. B. of V. heterophylla, Bertolini, but Burnat cleared up that confusion in 1890. Why Kew gives V. heterophylla as a synonym of V. gracilis var. valderia I hesitate to guess. In any case, after the publication of Burnat's elucidation and Becker's confirmation, it seems desirable to accept V. heterophylla as a distinct species belonging to the Calcarata section. Some forms of V. heterophylla are indeed difficult to distinguish from V. calcarata itself, and the species is very polymorphic, including sub-species such as V. splendida and V. messanensis, which are of sound garden value. The latter, V. heterophylla sb.-sp. messanensis usually appears as V. pseudo-gracilis, which was Huter Porta and Rigo's name for it, followed by Farrer. It is a Viola of luxuriant growth with, generally, reddish-violet flowers of medium size, the petals rather incurved, varying to yellow and purple or these colours mixed. There is a form of it called Imperatrix by Mr. Lacaita, which I have not seen, but which is described as a magnificent Viola with very large flowers of a very deep purple. It is a native of Eastern Sicily (about Messina) and of the "toe" of Italy, but is perfectly hardy.

Where so much confusion exists, it is not to be wondered at that busy catalogue writers go astray. I find, for example, V. Bertolonii given as a synonym of V. cenisia. I cannot account for this strange synonymity, but Farrer repeats it, and he also gives V. corsica as "a form of V. calcarata." The fact of the matter is that in 1854 Nyman gave the name of corsica (and this was continued by Rouy and Foucaud in their modern *Flora of France*) to this Corsican and Sardinian species, which was originally described by Salis in 1834 under the name of V. Bertolonii. It is a Calcarata species characterised by its very round flowers of reddish-violet, carried on long peduncles, and by its markedly long and slightly curved spur. It appears in certain lists under its correct name.

A puzzling Viola that is found in many catalogues and that was frequently on view on the table rock gardens inside the tent at Chelsea, is the so-called V. thuringiana. It is a pretty Viola with medium-sized flowers in which the two upper petals are purple or violet and the rest white or creamy-white. It obviously has a close connection with V. lutea, but is not so pretty as many forms of that species. In the east of Europe, *i.e.*, in the Carpathians, the Riesengebirge, the Erzgebirge, etc., V. lutea takes a slightly different form from that which is predominant in England, France and western Europe generally. The latter is the more common form. The main differences between the eastern and western plants are that in typical V. lutea the stipules are palmately divided in accordance with the usual Cornuta habit, while in the eastern form they tend towards a pinnate division. Further, the spur of typical V. lutea is two to three times the calyx appendices in length, but in the eastern form the spur barely exceeds or is just equal to them. The western form is also supposed to be more slender and graceful than the eastern, but I doubt if this difference would be observable in gardens. The species as a whole was named V. lutea by Hudson in 1762. In 1813, Willdenow named the eastern form V. sudetica (derived from the Sudeten range of mountains which form the northern frontier between Checko-Slovakia and Poland), from specimens which he found in the Berlin Botanical Garden. In 1840 Kirschleger named the western form V. elegans. Becker treats V. sudetica and V. elegans as sub-species of V. lutea.

Now V. thuringiana of our gardens presents just those peculiarities which distinguish V. sudetica from V. elegans, except that V. sudetica is nearly always yellow, whereas V. elegans is violet or yellow or these colours mixed (there is a violet concolor form of elegans which is pre-eminently beautiful, and this may be the French form, as in France V. lutea is invariably violet, and was described by Chatenaye under the name V. gracillima). The German province of Thuringia is just west of the Erzgebirge mountains, and though I have not actually come across records of definite Thuringian localities in which V. lutea has been found, it seems a feasible hypothesis that V. thuringiana is a variant of the sub-species V. sudetica, geographically intermediate between the focal centre of V. sudetica and the Rhine Provinces where V. elegans definitely continues the spread of V. lutea westwards. To this attempted allocation of V. thuringiana to its relative place in the genus, I have only to add the suggestion that the correct spelling should be thuringiaca. Perhaps some Latin expert would explain.

E. Enever Todd, Lt.-Col.

(*To be concluded.*)

NEGLECTED PLANTS.

Why is it that perfectly charming plants of which good stocks and fine collections were at one time plentiful and highly prized are now thrust far in the background and passing well nigh out of commerce and cultivation?

For what precise cause, for instance, has so handsome a plant as Begonia Rex been exiled from our conservatories, from our shows, and apparently from our affections? There was no vulgarity in the chaste marking and rich colouring of the foliage in the many fine varieties which erstwhile were so generally and so well grown, but to-day, they are never seen, except for a few relics of the past to be met with in the conservatories and corridors of a few ancient establishments. During last year I visited many nurseries, but only once did I notice Begonia Rex at all, and that was a few plants of particularly fine colours growing under the stages of the Orchid houses at Messrs. Black and Flory's nurseries.

Certain Orchids have sunk almost into oblivion, but in their case ample explanation is forthcoming in the fact that we have unquestionably superior modern varieties and hybrids, but no similar explanation can be advanced to account for the jilting of Begonia Rex. Easy of culture, constant in effectiveness, prone to no serious maladies, and serviceable in all sizes, this is a plant that suffers unwarranted neglect for no other apparent reason than that it has fallen a victim to fashion's capricious whim.

Sarracenias are in no better plight. Since the time when the firm of Bruce, of Chorlton-cum-Hardy, used to exhibit fine groups at the leading shows, they have seemed to be nobody's care. That they are not perfectly hardy may be urged as sufficient reason, but cool-house room is given to many subjects which lack the distinctive character and quaint beauty of these American "Pitcher" plants. In cool Ferneries, cold frames, or in Wardian cases, which are themselves worthy of restoration to popular favour, the finest of the Sarracenias may be grown with ease, whilst many a sheltered southern garden affords suitable and safe outdoor accommodation for S. purpurea and a few others.

How proud we were at one time to show our friends well developed umbrella standards of Epiphyllum truncatum, or E. Russellianum and E. Gaertneri. These also seem to have lost their hold upon our affections, and many a young man whose training in horticulture started within the last ten years has seen or heard nothing of grafting Epiphyllums on Pereskia stocks. I fail to see that conservatories have been improved by eliminating these bright and beautiful winter-flowering plants. There was a time when they were as readily sold to the general public as Cyclamens and Ericas, and pots of imported Hyacinths.

Poinsettias are much less grown than formerly, and yet the public must surely hold their brilliant scarlet bracts in high esteem, else why should there be ready sale for the crude and gaudy imitations? In America, Poinsettias are a leading feature with many large commercial growers, although the price of fuel must of necessity be carefully considered by the grower for either the London or provincial trade.

Eucharis, probably, has suffered through similar reasons; at any rate, the output to-day is as nought compared with the regular consignments one grower alone was sending when first I went to Covent Garden.

More difficult of explanation, however, is the strange loss of prestige and popularity of the Regal and fancy Pelargoniums, which those of us who glance back to last century remember as leading specialities in both trade and private establishments. What glorious specimens were shown at York Gala, at Taunton, and many other shows. Even the miners at their purely amateur shows would put down plants, each of which required a hand-barrow to itself, and with all our twentieth century advancement we have not a great deal to show that far excels the magnificence of those specimen Pelargoniums or of the pyramid Fuchsias which were invariably their near neighbours. However strong may be the argument against the methods of training and tying those plants, there is no gainsaying the fact that they were demonstrations of skilful plantsmanship, and even though our more aesthetic tastes may revolt against the prim formality of the "trained" specimens, that is inadequate reason for turning the cold shoulder upon a plant which, even as a free-grown specimen in a forty-eight pot, is capable of a display few of our present-day greenhouse plants can really eclipse.

Of the Show Auriculas it would seem almost futile to write. The number of old enthusiasts is reduced every year and new recruits to the Auricula fancy are not forthcoming. Collections of first-class varieties are disappearing, apparently unheeded, and without effort to rescue them from their fate, but if our present disregard results in total loss of a flower which is the very acme of refinement, rest assured regret and remorse will follow, and future generations of horticulturists will marvel at our blind folly. *A. J. Macself.*

IRIS GARDEN.

IRIS OCHROLEUCA.

IRIS ochroleuca, the golden-banded Iris, is a native of Asia Minor, and is a plant, not only of high beauty, but of such easy cultivation that it deserves to be more widely grown. It thrives in an ordinary border, though it is a moisture-loving plant, and by a stream or lakeside, its stately presence adds distinction to the scene.

The colour of the flowers is yellow, shading to white at the edges, but there are various varieties in which this colouring is displayed in different proportions.

The type grows about five feet high, more or less, according to the richness of the soil and the amount of moisture it contains. The flowers are whiter than in some of the others, the centre of each fall being occupied by a large, bright yellow blotch, edged with a broad band of white. The noble I. o. gigantea has white standards and broad, white margins to the yellow falls. There is a pretty form named Innocence; it flowers freely, but the distinctions of colour are not so marked as in some other named forms. Queen Victoria is a distinct variety which has standards of creamy white and falls of the same tone, with a golden blotch. Snowflake, another charming variety, has white standards and falls, but the yellow blotch on the latter is much fainter in colour than in the other forms. Warei is another good sort which has a more than usually showy blotch, more orange-yellow than golden.

All these Irises grow about five feet high, more or less. They need plenty of water during their growing and flowering season, the latter of which is June and July.

I was compelled for a time to grow I. ochroleuca in a dry border, and was delighted to see how great was the improvement manifested by the plants through giving copious supplies of clear water at the times mentioned.

Yet the true glory of the gold-banded Iris is only to be seen in moist soils, and a wonderful effect will be produced by planting a quantity by the stream-side or lake-side. Then the majesty of the erect leaves and the tall stems crowned with the charming flowers is simply exquisite. Hardy, free-growing, and presenting no real difficulties of cultivation, I. ochroleuca claims a welcome place in our gardens. *S. Arnott.*

INTERVARIETAL DIFFERENCES IN THE POTATO.

I.—FOLIAGE.

POTATO varieties have been elaborated through generations of cross-breeding; the seeds of self-set berries of all popular varieties carry many characters in a blended state and give rise to plants which differ amongst themselves and are distinct from the parent. It is not easy to find seedlings which cannot be distinguished from one another; but all conditions prevail, ranging from plants which are widely different to those which are very similar. Differences appear not only in the grosser features, but also in those of detail; moreover, these differences are not confined to form, but extend to physiological and chemical characters, such as maturity, disease resistance and composition. All recognisable differences are useful in distinguishing varieties, but those treated in the following sections will be mainly connected with form. During the growing it is possible to identify a variety with precision, but during the winter season, when tubers alone are available, this can be done only with exceptional varieties.

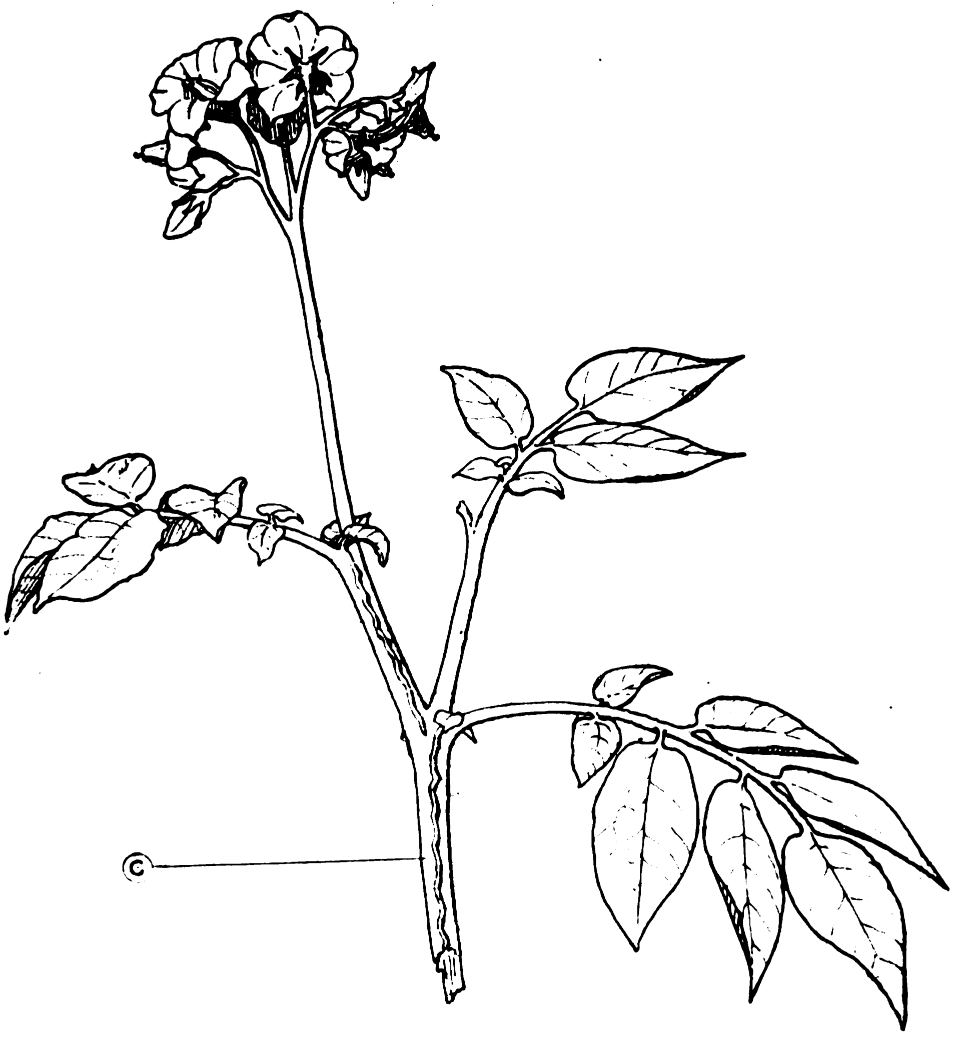

FIG. 9.—FLOWERING SHOOT OF POTATO ARRAN CHIEF, SHOWING THE WAVED WINGS (C).

FOLIAGE.

No hard and fast classification of the above-ground parts of the Potato has been attempted, or, indeed, is possible: an endless number of types exist, the number of varying characters is very great, and many of the individual characters have wide ranges of fluctuation. The most that can be done with the foliage is to define certain types and to describe it in such a way that those interested will have less difficulty in identifying the varieties with which they deal and in recognising impurities in crops.

Experience in the field shows that during the summer months Potato foliages are recognised largely by general appearance; it is undoubtedly true that the skilled observer recognises these by headmark without enumerating details of identification characters. This composite impression is very difficult to define because it is not produced by a few characters but by many, some of which cannot be described adequately in words. However, it would appear that the essential features which form the various combinations are as follow:—

1. The Contour of the Foliage.
2. The Relative Height of the Stems.
3. The Number, Branching and Colouring of the Stems.
4. The Size, Number and Set of the Leaves.
5. The Distribution, Size, Shape, Number and Colour of the Leaflets.

All the above may be modified by environment—climate, soil and cultivation—but essentially they are hereditary characters and are transmitted by vegetative propagation, *i.e.*, the usual method of propagation in the Potato. When we seek to utilise general appearance in grouping varieties, two difficulties are encountered: in the first place, there is the difficulty of fixing standards and, in the second, it is impossible to eliminate the personal conceptions of the classifier. Twelve standards have been adopted here, and an attempt has been made to group round each of these standards those varieties which are similar in general appearance of foliage. The salient features of each group are described. Some varieties have not been classed; it is recognised that more groups could have been adopted, and perhaps more varieties placed within the individual groups, yet the following grouping of Potato foliages by general appearance will materially assist a beginner in the study of Potato varieties.

GROUP 1.—TYPE: DUKE OF YORK.

Salient Features.—Low growing; spreading; stems weak; leaves long, open and drooping.

Immune Ashleaf, Ringleader, Duke of York, Ninetyfold, Entente Cordiale, Witchhill, Edzell Blue, Puritan, Early Pink Champion.

GROUP 2.—TYPE: BRITISH QUEEN.

Salient Features.—Slightly taller than group 1; spreading; stems more robust than in group 1 and branching frequently near the ground; basal foliage vigorous.

British Queen, Majestic, King George.

GROUP 3.—TYPE: UP-TO-DATE.

Salient Features.—Medium to tall; spreading; stems robust and branching near the ground; basal foliage vigorous; taller and more vigorous than group 2.

Up-to-date, Celt, Field-Marshal, Tinwald Perfection, Bobbie Burns, Catriona.

GROUP 4.—TYPE: SHARPE'S EXPRESS.

Salient Features.—Medium height; upright; secondary leaflets very numerous and conspicuous.

Sharpe's Express, Lochar, Mein's Early Round, Myatt's Ashleaf, Dargill Early.

GROUP 5.—TYPE: KING EDWARD.

Salient Features.—Tall; upright; leaves drooping; characteristic rosette-like tops.

King Edward, St. Malo Kidney, Royal Kidney, Evergood, Norna, Lymm Gray, Evergood Rogue.*

GROUP 6.—TYPE: SUTTON'S ABUNDANCE.

Salient Features.—Medium to tall; upright; stems robust; lacking the characteristic tops of Group 5.

(*a*) With close leaf:—Abundance, Irish Queen, Miller's Beauty.

(*b*) With fairly open leaf:—Great Scot, Sefton Wonder, Arran Chief, Nithsdale, Scottish Chief, Cumberland Ideal, Footprint, John Bull, Blue Gloss, "Great Scot Rogue" in Kerr's Pink.

GROUP 7.—TYPE: GOLDEN WONDER.

Salient Features.—Tall; upright; stems robust; leaflets dull and much wrinkled and arched; apical foliage more luxuriant than basal foliage.

Langworthy, Golden Wonder, Wilson's 338/3, Corona, Crusader, Nonesuch, Rocks, Burnhouse Beauty.

GROUP 8.—TYPE: KEPPLESTON KIDNEY.

Salient Features.—Tall; upright and very open; stems robust, few and coloured; leaf open.

Keppleston Kidney, Cardinal, Red Ashleaf, Tawny, Edgecote Purple, Hibernian.

GROUP 9.—TYPE: TEMPLAR.

Salient Features.—Tall; upright; open; stems very robust; leaves more numerous than in Group 8; leaf open and rigid.

Templar, Glenalmond, Dean, Southesk, White-flowered Rogue in Crusader,* Dobbie's 45 C.B.

GROUP 10.—TYPE: KERR'S PINK.

Salient Features.—Very tall; upright; dense and vigorous; stems very robust; stems and midribs of leaves coloured; branching at the tops.

Kerr's Pink, Ranfurley Red, Arran Victory, McKelvie's 376, Sir Rufus, Ryecroft Purple, Kerr's Pink Substitute,* Gregor Cups.

Group 11.—TYPE: PRESIDENT.

Salient Features.—Tall; upright; vigorous; stems very robust; leaves rigid and set at acute angle to upper stem.

President, General, Marconi, Blue President Rogue.*

GROUP 12.—TYPE: CHAMPION.

Salient Features.—Tall; spreading; open and vigorous; stems robust and thin; leaf very open.

Champion, Perth A.,* Up-to-date Rogue resembling Champion.*

Although the above groupings will be found of much assistance in memorising the general appearance of variety foliages, a more intensive study is required before actual identification can be made with certainty, hence differences in the individual characters are set out systematically below. It has been considered necessary to go into much detail, as the principal features of some varieties differ very slightly, and reference to detail characters may furnish at times the only conclusive evidence of identity. As a rule, however, the first distinction of a variety will be found in the larger characters, regard for finer points being necessary only when the larger ones offer no help.

Most of the botanical characters of the Potato are influenced by environment, but the modifications of any character are normally of about the same degree in different varieties grown under similar conditions. All character differences have therefore a relative value, and are important in detecting impurities in the field. However, for the identification of a variety reliance must be placed primarily on points which have an absolute value. Amongst varieties an individual character has generally a range of variation, starting with a strong and finishing with a week development; it appears, however, most often in a medium condition, *e.g.*, dark green, medium green and light green foliage.

It is the extremes—the strong and the weak developments—which are of most use in diagnosing varieties.

CONTOUR OF THE FOLIAGE.

The contour may be said to be spherical when growth is equally vigorous in all directions. Most varieties, however, show a more abundant growth upwards, hence the typical shape becomes more oblong rectangular, this shape being modified to a greater or lesser extent according to the vigour of apical or basal foliage.

THE STEM.

Stems differ according to variety in the following characters:—Height, colour, strength and thickness, frequency, branching, peculiarities of wing, nodes, solidity, pubescence and distribution of the leaves.

(*a*) *Height.* As previously stated, the height of Potato stems is associated with the date of maturity of the plants. Varieties may be classed as tall, low-growing and of medium height. Kerr's Pink, Duke of York and Great Scot respectively are typical of these groups.

(*b*) *Colour.* On occasion the colour of the stem may be of great use in diagnosing varieties Some varieties have green stems always, *e.g.*, Fortyfold, Marquis of Bute, Lochar and Golden Lass; the great majority of Potato varieties, however, have some colour on the stem. This colour is due to a pigment which can produce a range of colours from pale pink to deep purple. Differences exist not only in the intensity of colour but also in its distribution; thus we speak of the stems of British Queen and King George as being reddish-brown at the base; of Champion, Templar and the Dean as mottled purple; of Di Vernon as red-purple; of Epicure and Eclipse as tinged pink; and of Arran Chief and Abundance as tinged blue-purple, especially at the base. Often the stem is only markedly coloured at the bases of the midribs of leaves, a feature of special consequence in some varieties, *e.g.*, Buchan Beauty. It is noteworthy that all colour intensifies as the season advances and, as a result, discretion is to be exercised with the age of the plant. There seems to be no doubt that sunlight is favourable to the production of pigment, and that insufficient moisture and want of manuring have the same effect. Varieties with coloured tuber skins have generally coloured stems; there is, however, no correlation between stem and tuber skin colours; Fortyfold, which has coloured tubers, has green stems, while International Kidney, a white-tuber variety, has very dark coloured stems.

(*c*) *Strength and Thickness.* Under uniform conditions the strength of Potato stems is useful in separating varieties. Some, such as Immune Ashleaf, have weak stems, and others, such as President and Rhoderick Dhu, have much sturdier stems. In a great measure the strength of a stem is an index of its thickness, yet this is not always the case; Champion, which has thin stems, may be mentioned as a variety with exceedingly strong stems. The thickness of stems, however, may often be used by itself as a varietal identification mark; Catriona and Di Vernon may be confused at times, but a comparison of their respective stems may lead to absolute differentiation, those of Catriona being much thicker.

(*d*) *Frequency.* Varieties differ greatly in the number of stems which may develop, some possessing, like Summit, many, and others fewer, *e.g.*, President and Golden Wonder. In general, however, it is only when the varieties under observation are at the opposite ends of the scale of numbers that one may use stem frequency with any assurance.

(*e*) *Branching.* Many varieties, *e.g.*, Arran Comrade, Ally, Lochar and Great Scot, do not normally branch above ground. Other varieties have stems which are always branched. Some seem to branch mainly at the apex of the growth, *e.g.*, Kerr's Pink, and others nearer the ground level. Basal branching is a distinct feature of Group 3, and to a lesser extent, of Group 2.

(*f*) *The Wings.* These may be of great use in diagnosis. Generally, in early varieties the wings are less conspicuous than on late varieties. In some types they are very much waved (Fig. 9), *e.g.*, Arran Chief; in others they are unwaved (Fig. 10), *e.g.*, Lochar; and in others again an intermediate condition exists, *e.g.*, Great Scot. Where stems are coloured the wings are usually coloured also, but this is not so in every variety, Di Vernon, Loose Anthered Rogue* and Buchan being examples of the combination—coloured stems and green wings.

(*g*) *The Nodes.* The nodes may be used at times in separating one variety from another. The characters which vary are the colour and size. In most varieties the stem colour, if any, does not pass completely through the nodal tissue, so that the latter is greener than the remainder of the stem. This phenomenon is well illustrated in the variety Eclipse. There are, however, other varieties, *e.g.*, Arran Victory and International Kidney in which the nodal tissue is as highly coloured as the internodal tissue. A few varieties are distinguished by having nodes which are swollen, a feature especially prominent in the variety, Summit.

(*h*) *Solidity of Stem.* Reference has been made elsewhere to the breaking down of the pith in the internodal tissue of all but the upper parts of the aerial stem. This breaking down leaves the stems hollow, a condition easily determined by making a cross-section between two nodes. All varieties do not possess this characteristic, two, viz., Eclipse and Carisbrook Castle, being peculiar in that their stems remain solid until maturity, when a slight breaking down occurs. The comparative size of the hollow is also useful in distinguishing several varieties.

(*i*) *The Degree of Pubescence.* The hairiness of stems is not very helpful in deciding between varieties, most having about the same development of hairs. Nevertheless, on occasion it can be used, *e.g.*, the stems of Rhoderick Dhu are hairier than those of Arran Chief. Its usefulness, however, is almost entirely limited to diagnosis late in the season, when the remaining foliage parts are dying.

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* See *Key to Potato Trials and Reference Collection at East Craigs, and Philpstoun*, 1925. Board of Agriculture for Scotland.

(*k*) *The Distribution of the Leaves.*—In some varieties the basal internodes are short and there is a crowding of leaves at the bottom of the stems (c.f. Group 3); other varieties have long basal internodes, the leaves being more numerous at the apex (c.f. Group 7). *T. P. McIntosh.*

(*To be continued.*)

VEGETABLE GARDEN.

A TRIAL OF SPRING CABBAGES.

The question of varietal merit is one that permits of no final answer. Soils, seasons and strains of seed all help to mould opinion, and all are changing factors. At the same time, valuable information is gained by observing a number of varieties of any given species growing under the same conditions. I have had the interesting duty, this year, of noting the behaviour of several varieties of spring Cabbages. They are planted on a fairly rich, medium loam. The following varieties are included in the trial: Mein's No. 1, Sutton's Favourite, Offenham, Ellam's Early, Wheeler's Imperial and Beefheart.

Mein's No. 1.—The stock of this variety appears to be true. The percentage of rogues is certainly not more than two, and the plants put up a splendid fight against the fairly severe winter of last year. Concerning the actual Cabbage, its appearance might be better. It is uneven in shape and rather rough-looking. The heart is firm, large and of good cooking quality.

Sutton's Favourite.—Eight per cent. of rogues developed in this variety, and they will take longer to mature than the true stock. Apart from this misadventure I can speak very highly indeed of Favourite. The habit is of medium vigour and the Cabbage very firm.

Offenham.—In my judgment this is still one of the best spring Cabbages. Three per cent. of rogues appeared, but these were not serious departures from the type. I do not wonder that this variety finds so much favour with market gardeners. It yields weight and size, but there is no tendency to coarseness.

Ellam's Early.—I have been rather disappointed in this variety, because the heads have shown a tendency to splitting. The tendency has never developed to such a marked degree before, in my experience. Eleven per cent. of the heads have opened in this way. The stock is quite pure and the normal plants have matured the firm, good quality produce that one associates with this variety.

Wheeler's Imperial.—This was the best kind in the trial; not one plant can be described as a rogue. It might be an exaggeration to state that the heads are as much alike as Peas but the evenness of the batch makes the comparison permissible. The medium-sized heads are solid and of good shape.

Beefheart.—This is a large Cabbage and requires a longer season for development than any of the aforementioned varieties. Four per cent. of rogues have appeared in the stock and there are many more plants that are dangerously near the dividing line between pure and impure. The heads are large and of fairly good shape. I am not satisfied that this variety is one that can usefully be grown for spring cutting. *Geo. H. Copley, N.D.H.*

SPRING CABBAGES FOR NORTHERN GARDENS.

Varieties of Spring Cabbages are many, and no doubt some are best adapted for certain districts, but where the following have not yet been tried I would recommend April and Harbinger, the former coming into use in April, followed closely by the latter. Flower of Spring is another most reliable variety, and makes a splendid succession to the two first named. *A. H. Harrison.*

LAW NOTES.

LIABILITY FOR DAMAGE BY TREES.

In *The Builder* of the 25th of June, reference is made to an interesting case (Noble v. Harrison) on which a Divisional Court has delivered a judgment of considerable moment to landowners. The case concerned a Beech tree, some eighty-five years old, a large branch of which fell on to a motor coach which was on the highway. In July, 1925, the branch, over twenty feet long, which extended upwards over the road, suddenly fell, damaging the motor coach. The owner of the land on which the tree was growing employed a competent woodsman, who was instructed to report on any tree which required lopping, but no report had been made on this tree; the bough was not dead, the sap was running, and leaves were growing on its extremities.

The County Court judge had found that the branch must have become cracked where it broke, slight decay must have set in, the branch must for some time have been liable to break, and therefore constituted a danger to persons using the highway; but having regard to the height of the bough above the ground and other circumstances, he came to the conclusion that knowledge of the defect could not be imputed to the defendant; he still, however, found for the plaintiff, on the ground that the defendant was liable as for a nuisance, and secondly, that a person who keeps something dangerous on his land is liable if it causes damage.

The Divisional Court overruled this judgment, pointing out *inter alia* that a natural object such as a tree was outside the principle alluded by the County Court judge, that a man who keeps something dangerous on his land is liable for damage caused by it, as a man cannot be expected to be an insurer of nature. In ordinary cases, naturally, landowners are responsible for damage by their trees if any negligence can be shown; but on the estate in question every care appeared to have been taken, and the defendant was in a position to prove that the defect in the branch was latent, and not apparent.

The Builder goes on to lament the present tendency, encouraged by the Public Health Act, 1925, to compel owners of trees along highways to lop them drastically, thus depriving the roadways of all shade, and destroying the beauty of many country districts.

In conclusion, it is suggested that landowners can do something to prevent this by themselves paying careful attention to trees near the highway, and removing such branches as actually overhang it; for the private and descriminating lopping of branches is likely to be far less destructive than the wholesale operations which might be demanded by a public authority.

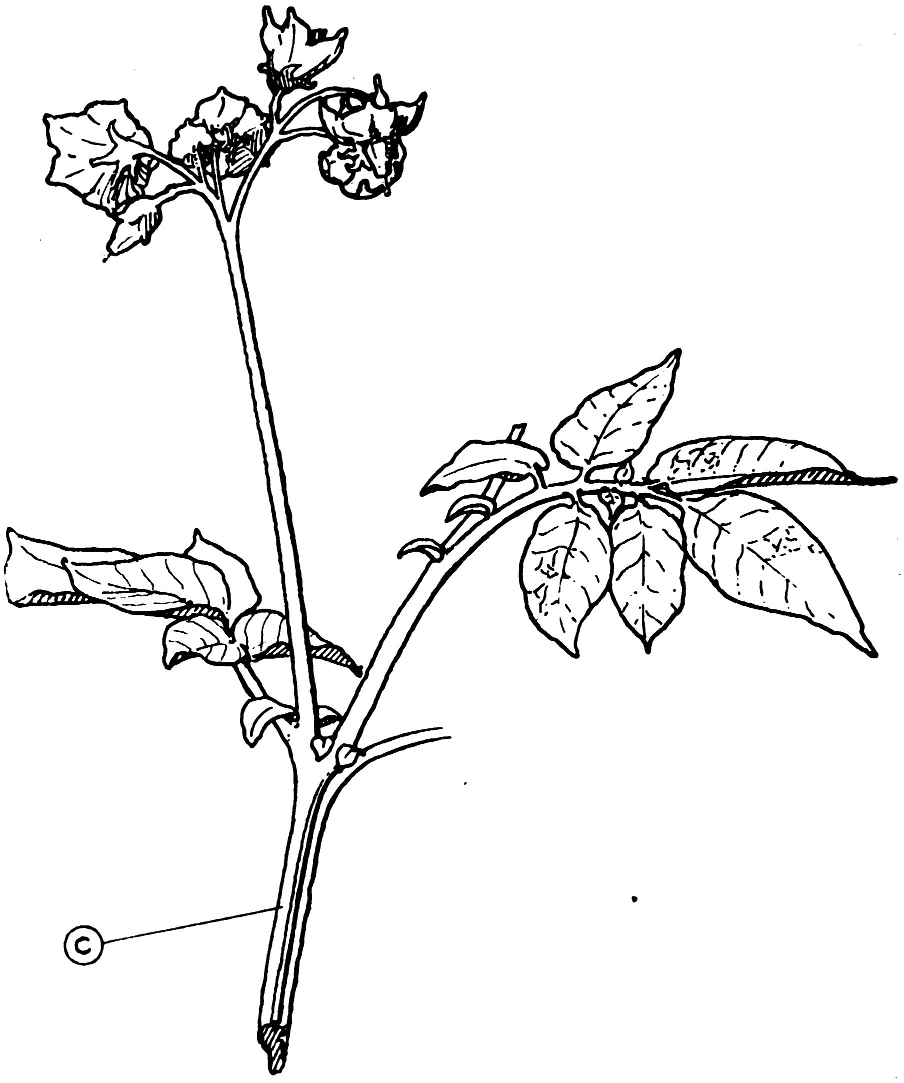

FIG. 10.—FLOWERING SHOOT OF POTATO LOCHAR SHOWING UNWAVED WINGS (C).

SOCIETIES.

ROYAL HORTICULTURAL.

June 29 and 30.—The usual fortnightly meeting was held on Tuesday and Wednesday last in the Society's Hall, Vincent Square, Westminster. The exhibition was an exceedingly good one and occupied almost all the available space. A great feature of the show was the numerous fine exhibits of Delphiniums and these, together with other hardy border flowers, constituted the chief subjects displayed. There were two excellent groups of Roses, a very pleasing water pool planted with varieties of Water Lilies, several fine collections of Carnations and an imposing group of Tree Ferns.

There were fewer Orchids than usual and only two exhibits were brought to the notice of the Fruit and Vegetable Committee. Neither of these committees made an award to a novelty, but seven Awards of Merit were given by the respective sections of the Floral Committee.

Orchid Committee.

Present: Sir Jeremiah Colman, Bt. (in the chair), Mr. Gurney Wilson (Hon. Sec.), Mr. Fred. J. Hanbury, Mr. H. T. Pitt, Mr. H. G. Alexander, Mr. Charles H. Curtis, Mr. J. E. Shill, Mr. A. McBean, Mr. John C. Cowan, Mr. R. G. Thwaites, Mr. T. Armstrong, Mr. E. R. Ashton, Mr. J. Wilson Potter, Mr. Fred. K. Sander and Mr. Stuart H. Low.

No awards were made and very few novelties were forthcoming.

Groups.

Messrs. Stuart Low and Co. exhibited a group of Orchids and in their display they had Miltonia Charlesworthii with four good spikes, Cattleya Mendelii alba, Laelio-Cattleya Medina var. Excelsia, Brasso-Laelio-Cattleya Orient, and such old favourites as Epidendrum prismatocarpum, Bulbophyllum Lobbii, Anguloa Ruckeri, Aerides odoratum and the tiny-flowered but elegant little Hexadesmia coerigera.

Four beautiful Odontoglossums, each a well-grown plant, were exhibited by J. J. Boulton, Esq. (gr. Mr. Lyne), Claygate Lodge, Claygate, Surrey. These were O. Doreen var. D. A. Cowan of fine form and red-brown and rose-colouring; O. eximium var. Leonora, heavily marked with rich red-brown on a blush-white ground; O. President Poincaré, a grand hybrid with purple and red-purple shading, and a white, red-marked and golden crested lip; and O. eximium var. Purple Prince, with red-purple markings on a white ground.

Messrs. Sanders showed a large plant of Aerides virens var. albanensis, carrying a large, drooping spike of white, scented flowers, each marked with mauve-blue. Messrs. Black and Flory contributed several Miltonias, notably a good form of M. Princess Elizabeth, and two varieties of M. Lena in which the mask is very sharply defined.

Mr. W. Van de Weyer, Cliffe House, Dorchester, showed a spike of a Eulophia species from the Belgian Congo, with mauve petals and green and purple lip; as it could not be identified the Committee asked that it be sent to Kew.

Floral Committee.

Section A.—*Present:* Mr. H. B. May (in the chair) Mr. J. F. McLeod, Mr. H. J. Jones, Mr. Mark Fenwick, Mr. W. Howe, Mr. W. H. Page, Mr. M. C. Allwood, Mr. A. Vasey, Mr. J. B. Riding, Mr. W. B. Gingell, Mr. D. B. Crane, Mr. C. E. Pearson, Mr. W. P. Thomson and Mrs. Helen L. Smith.

Section B.—*Present:* Mr. G. W. E. Loder (in the Chair). Mr. C. T. Musgrave, Mr. E. A. Bowles, Mr. F. C. Stern, Mr. J. Hudson, Mr. W. B. Cranfield, Mr. G. Harrow, Mr. L. R. Russell, Mr. F. G. Preston, Mr. R. Cory, Mr. C. Williams, Mr. Amos Perry, Sir Wm. Lawrence, Mr. R. C. Notcutt, Mr. T. Hay and Mr. R. D. Trotter.

Awards of Merit.

Hydrangea Mrs. H. J. Jones.—A beautiful rich pink variety with large, compact heads of flowers—a variety of the Parsifal type and equally as fine. Shown by Mr. H. J. Jones.

Arctotis breviscapa.—This was probably the most interesting of all the novelties exhibited. It cannot be described as a new plant, for it was figured in *Bot. Mag.* in 1882, t. 2182, being one of the first species introduced from the Cape. Mr. Thomas Hay, who exhibited the plant, informs us that this Arctotis may be treated as an annual although it is a perennial species and from a sowing made in February, flowering plants were obtained in about eight weeks. The flowers are exceedingly beautiful, coloured rich orange, and in some cases with a reddish-brown zone at the base. In the centre of the flower is a zone of peacock-blue dots which, together with the rich orange of the florets, gives a most dazzling effect. The plant is very free-flowering, the inflorescences being carried on stems twelve to eighteen inches in height. The foliage is pinnate and coloured grey. Shown by Mr. T. Hay, Regents Park.

Pontederia crassipes var. lanceolata.—This narrow-leaved form has flowering spikes some three feet tall, bearing at the apex a number of lavender-blue flowers with two greenish yellow blotches on the inside of the upper petal. The foliage is borne on a long petiole and the blade is like that of a lance—a very handsome plant from every point of view and a good subject for the indoor water garden. The correct name of the plant is Eichornia crassipes. Shown by Mr. Amos Perry.

Rhododendron diaprepes.—This species produces a big truss of white, campanulate flowers borne on reddish petioles and the reddish colour runs into the veins on the outer side of the flower. In the specimen exhibited there were eight to nine blooms in a truss. The foliage is pale green above, glaucous beneath and of a leathery texture. The specimen shown was somewhat past its best. Exhibited by Lionel de Rothschild, Esq., Exbury, Southampton.

Delphinium Lady Edith.—This variety develops an immense spike of large, silver-mauve flowers with outer segments of cobalt blue and a mauve and black eye. It is an exceptionally vigorous variety and the individual blooms are of the largest size. Shown by Messrs. Blackmore and Langdon.

Double-flowering Annual Wallflower.—Several plants representing a new strain of double-flowering annual Wallflowers were exhibited by Mr. Ernst Benary, Erfurt, Germany. The strain was obtained by crossing a single blooming annual Wallflower with double-flowered, biennial varieties. All the plants exhibited were sown on the first of January. The exhibitor stated that another batch raised from seeds sown on January 7 began blooming on June 1. The value of the strain appears to lie in the fact that the plants may be flowered at almost any time of the year by making sowings at different periods. In the specimens exhibited some had flowers of a rather dingy brown, but in other plants the blooms were a deep yellow.

Ononis fruticosa.—This is a very old garden plant and was figured in *Bot. Mag.* t. 317. It is a shrubby species, as the specific name indicates, and makes a bush one foot or two feet high. The flowers are disposed in a raceme, each peduncle carrying three pink blossoms, the wings being almost white. The leaves are trifoliate, serrate, and shining above. Exhibited by the University Botanic Garden, Cambridge.

Botanical Certificate.

This award was made to Orobanche crenata and Cooperanthes alipurensis. The former plant is a parasite and was shown growing on the Broad Bean. The spike of whitish flowers with much crenated lip is very attractive. There is a little staining of purple in both the hood and lip of the flower. Shown by Mr. William Van de Weyer, Cliffe House, Dorchester. Cooperanthes alipurensis is a bulbous plant producing tubular flowers some three inches long of blush pink on a creamy ground. It is apparently a bigeneric cross between Cooperia and Zephyranthes. Shown by Sir Wm. Lawrence.

Other Novelties.

Mrs. Walter Jones, Aberuchill Castle, Comrie, showed a white seedling of Meconopsis Wallichii, a very stately plant some six feet tall and bearing a large number of pure white, nodding flowers. The Hon. Vicary Gibbs (gr. Mr. E. Beckett) showed Pinus sylvestris alba, a form in which the new shoots develop white foliage, but which later in the year turn a normal green. For some two months the plant is very effective and conspicuous amongst a collection of Conifers. The Aldenham specimen is some twenty feet to fifty feet high.

A very fine form of Lobelia compacta named Mrs. Andrews was shown by Mr. E. F. Smith, 112, Cheddington Road, Edmonton. The flowers are a deep, rich blue and the variety represents one of the best types of this useful summer bedding flower.

Groups.

Mr. L. R. Russell had an uncommon exhibit in the form of a glade of Tree Ferns—magnificent specimens of Dicksonia antarctica—arranged over other choice foliage plants, a specimen of Dracaena Backii being conspicuous in the centre. A plant of Ananassa sativa in fruit, fine examples of Nidularium Meyendorfii, with the rich scarlet centre formed of the bases of the leaves, Fittonia argyroneura, Maranta Veitchii, Selaginellas and Ferns in variety were also included in this noteworthy exhibit.

Rev. J. H. Pemberton showed Roses in variety. He filled a small table with choice blooms of such sorts as Naomi, K. of K., Margaret Dickson Hamill, Vanity, Isobel, Ruth, and Dorina Neave, a new H.T. variety of shell pink colour with a delicious perfume.

Messrs. Chaplin Bros., Waltham Cross, had glorious blooms of many beautiful varieties of Roses such as Mabel Morse, Lady Inchiquin, Rev. F. Page Roberts, Betty Uprichard, Golden Emblem and Florence L. Izzard.

Messrs. C. Engelmann, Ltd., showed a small but very choice exhibit of perpetual-flowering Carnations. Excellent Carnations of the Perpetual-flowering and Souvenir de la Malmaison types were shown by Messrs. Stuart Low and Co.

Another extensive exhibit of these flowers was made by Messrs. Allwood Bros. who had also perpetual border Carnations and numerous sorts of Dianthus Allwoodii.

Mr. W. C. Slocock, Woking, showed a late flowering batch of Rhododendrons, being hybrids of R. discolor.

Mr. Amos Perry, Enfield, showed Water Lilies flowering in a large pool, which was cleverly arranged with banks of flowers at either end to give a natural effect. The Water Lilies were finely flowered and represented excellent plants of Nymphaea Andreana, N. Attraction, N. Conqueror, N. Neptune, N. formosa, N. marliacea carnea, N. Mrs. Richmond and N. fabiola. Of the border flowers used for grouping the banks the best were Phlomis chrysantha, Iris aurea, Brodiaea laxa, B. congesta, Lilium washingtonianum, L. dauricum umbellatum, Campanula Verdun, Armeria Ruby, and Aconitum Newry Blue.

Mr. H. J. Jones, Lewisham, put up a most magnificent group of Delphiniums that occupied almost the whole of the end of the hall opposite the clock. The flowers were arranged on four tiers covered with green baize and the use of pale green baskets for holding the spikes was in excellent taste. The flowers in the back row were in bamboo epergnes, six feet tall and the imposing spikes, arranged with great skill, were cleverly disposed for colour effect. The varieties included all the finest in cultivation.

Adjoining this exhibit was another of the same flower shown by Mr. T. Carlisle, Twyford, a smaller but very select exhibit.

Messrs. Bees Ltd., staged a very large group of Delphiniums, making a big bank of blue near the entrance. The spikes were of the largest size and included most of the best varieties in cultivation, such as Lorenzo de Medici, Coquette, Jenny Jones, Willy O'Brien, The Shah, Wales, and Norah Ferguson.

Messrs. Blackmore and Langdon contributed some glorious Delphiniums in a large group of these flowers. The spikes were of immense size, with flowers, in proportion, of the most glorious shades of blue, lavender, silvery-mauve and other rich tones found in this popular flower. The varieties included Norah Ferguson, The Shah, Mrs. Paule Nelke, The Bishop, Sir Douglas Haig, Blue Boy, Howard H. Crane and Lord Derby.

Mr. T. Bones, Cheshunt, had a large number of fine Delphiniums in most of the popular varieties.

Messrs. Hewitt's, Solihull, showed Delphiniums on a three-tiered staging. They were grand specimens and included the varieties King George, Ruffled Beauty, The Bishop, Rev. E. Lascelles, Rose Marie and Mrs. Townley Parker.

Messrs. Barr and Sons made a feature of Iris xiphioides, the English Iris, the varieties displayed being as imposing as Iris Kaempferi. The rich blue variety named Blue Giant is a glorious flower and others of great merit were Cattleya, mauvy-lavender: Mont Blanc, white; Prince Mauritz, vinous-purple, and La Majesteuse, clear, deep blue. Other interesting subjects in this exhibit were Eremurus Shelford Seedling, Heuchera Rose Cavalier, Lilium Martagon dalmaticum and Roscoea humeana.

Messrs. B. Ladhams, Ltd., displayed choice hardy flowers in which Campanula persicifolia varieties, border Pinks, Hemerocallis B. Ladhams, Coreopsis auriculata superba, Lavatera Olbia rosea and Armeria plantaginea Bee's Ruby, were conspicuous.

Messrs. Robinson, New Eltham, arranged a rock garden planted with a variety of subjects.

Messrs. R. Tucker and Sons were also exhibitors of alpines, set in stone and fibre, a big pan of Campanula G. F. Wilson being very conspicuous.

Messrs. Waterer, Sons and Crisp exhibited border flowers and alpines, the latter representing a choice selection of those now in bloom, such as Viola bosniaca, Campanula Bellardii, Wahlenbergia vincaefolia, Nierembergia rivularis and Erythraea Massonii.

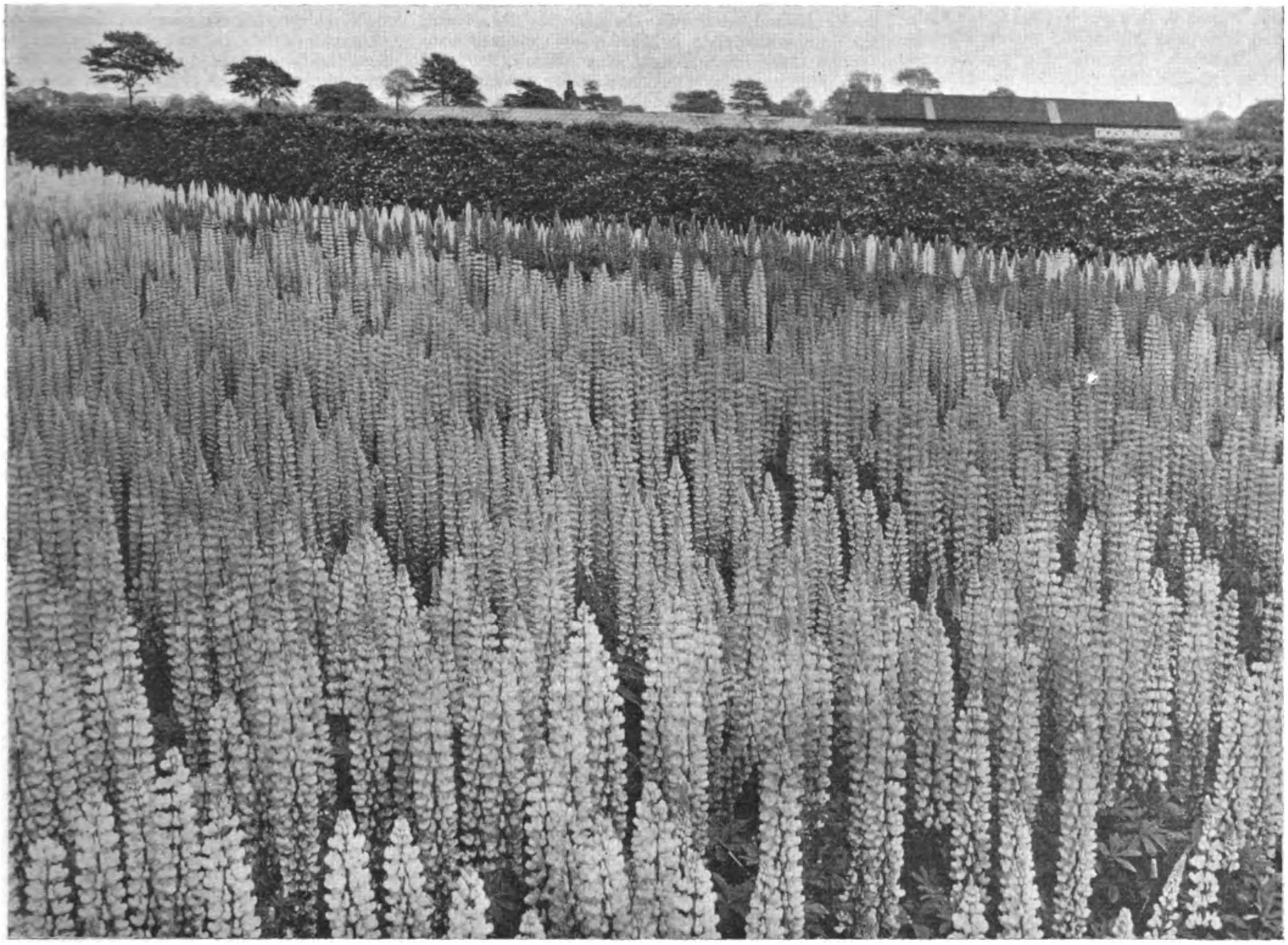

FIG. 11.—THE "NORTHERN" STRAIN OF LUPINS AT MESSRS. DICKSON AND ROBINSON'S TRIAL GROUNDS.

(see p. 19).

Mr. G. W. Miller, Wisbech, exhibited many vases of border flowers, including numerous fine Delphiniums.

Messrs. Bakers showed hardy flowers, principally Delphiniums, Lupins and "Sunbeam" Poppies, a type of Iceland Poppy. A dark form of Lilium umbellatum named incomparabilis was shown well by this firm.

Messrs. M. Prichard and Sons filled a corner at the clock end of the hall with hardy border flowers and a big batch of Iris Kaempferi. Tritomas, Delphiniums, Phloxes, Lupins and Lilies were the other principal features.

Mr. G. R. Downer, Chichester, filled a long table with his famous strain of Lupins in colours ranging from deep blue through light blue to mauve, light and deep pink. In some the flowers were parti-coloured—a deep pink hood and pale pink wings, purple hood and lavender-blue wings, etc. The most conspicuous subjects in a group of plants shown by Hollambys' Nurseries, Groomsbridge, were large masses of Campanula Telham Beauty, and pot plants of Ceanothus Gloire de Versailles.

The Chalk Hill Nurseries, Reading, displayed an extensive group of hardy border flowers in variety, and a big batch of Ryburgh Poppies, a glorious double type of Shirley Poppy. Many choice border flowers were shown by Mr. W. Wells, junior.

Mr. F. G. Wood, Ashtead, Surrey, showed vases of border flowers, the pretty Festuca glauca being used as a front row plant.

Mr. Gavin Jones, Letchworth, arranged a rockery on tabling, with generous pockets filled with such things as Potentilla Warrensii, Viola declinata, Campanula pulla, C. cenisia and Genista dalmatica.

Messrs. Maxwell and Beale exhibited alpines in flower arranged in rock work on tabling. Gazania hybrida Vanity is clear lemon and without the basal markings of G. splendens, which was also shown.

The Misses K. and E. Hopkins had a small rockery planted with alpines.

Fruit and Vegetable Committee.

Present: Mr. C. G. A. Nix (Chairman), Mr. J. Cheal, Mr. W. Poupart, Mr. A. Poupart, Mr. George F. Tinley, Mr. P. C. M. Veitch, Mr. E. Beckett, Mr. E. Neal, Mr. J. Wilson, Mr. W. H. Divers and Mr. A. N. Rawes.

A new Apple named Lalla was sent by Mr. Frank Walker, from Launceston, Tasmania. It is said to have originated from Delicious, and much resembles the old Devonshire Queen Apple. The fruits were soft and much past their best. Mr. E. Beckett exhibited Rhubarb The Streeter, and stated that it has proved to be the best variety at Aldenham, and the only one that has made good growth after transplanting this season. This variety obtained a First Class Certificate from the Royal Horticultural Society of Ireland sometime since.

LEICESTERSHIRE AGRICULTURAL.

A most successful flower show was held for the first time this year on June 11 and 12, in conjunction with and under the auspices of the Leicestershire Agricultural Society. The Society has been established ninety-two years, and this year has purchased a new show ground in the Aylestone Road as a permanent home.

H.R.H. The Prince of Wales, K.G., attended on Friday, and was conducted through the exhibition by the Duke of Rutland, the High Sheriff of the County.

The horticultural exhibits were accommodated in one large marquee over which Sir Arthur Hazelrigge, Bart., acted as steward, and Mr. Peter Blair as manager.

Messrs. Waterer, Sons and Crisp staged a very fine group of Rhododendrons, among which were two new varieties: one named Monstrous, and the other un-named, for which the Prince gave his consent to be named Prince of Wales.

The variety is of strong constitution and the truss is quite half as large again as that of Pink Pearl, the individual bloom is also much larger and coloured deep rose pink.

A Certificate together with a Large Gold Medal was awarded to this exhibit.

Other new items of interest which were noted were three new varieties of Sweet Peas, staged by Messrs. Robert Bolton and Son, Essex, named Colorado, Model, and Royal Mauve. This exhibit was awarded a Gold Medal.

Gold Medals, in addition to the above, were awarded to Messrs. C. Englemann, Ltd., for Carnations; Messrs. Allwood Bros., for Carnations and Dianthus Allwoodii. Silver Medals to Messrs. Carlile, Twyford, for herbaceous flowers; to Messrs. Maxwell and Beale, Broadstone, for alpines; to Messrs. Harrisons, Leicester, for vegetables; to Miss Thompson, Handworth, for Cacti; to Messrs. Bakers, Wolverhampton, for herbaceous flowers; to Messrs. Reamsbottom and Co., West Drayton, for Anemones; and to M. Pritchard and Sons, Christchurch, for herbaceous flowers.

In the competitive classes, Mr. W. Holmes, Chesterfield, was awarded the first prize for a group of miscellaneous plants arranged on a space of 300 square feet; Messrs. Harkness and Sons, Bedale, were placed first for a collection of hardy perennials, in which Messrs. Gibson and Co. were second; Mr. Robert Bolton was awarded the first prize for a collection of Sweet Peas, and Messrs. W. and J. Brown, Peterborough, excelled in the class for a collection of Roses on a space sixteen feet by four feet, in which Mr. Vicary, Leicester, was second.

CHELTENHAM FLORAL FETE.

Amid delightful surroundings and delightful weather the Cheltenham Society held its third annual Show under the new regime, in the Montpellier Gardens, on June 30 and July 1. The "Garden Town" of Cheltenham was looking its best for the occasion, and was full of visitors drawn thither by the Cheltenham Show and the National Sweet Pea Society's Exhibition held in conjunction therewith.

The Montpellier Gardens provide a charming site, almost in the centre of the town, a little beyond the famous promenade and not far from the railway station. The show was a good one and so much in advance of 1925 as that year was in advance of 1924, thus giving rise to the hope that once again, as half-a-century ago, the Cheltenham Floral Fete will become one of the finest of provincial horticultural functions. For the present the show is run under the auspices of the Cheltenham Chamber of Commerce—a very enterprising body—with Mr. J. Cypher as Chairman and Mr. Cassidy as Secretary of this horticultural feature.

Trade Displays.

Trade groups were conspicuously good and there is keen competition for the three cups and medals offered. The Cheltenham Cup offered for the best trade display was worthily won by Messrs. J. Cypher and Sons with a very artistic arrangement of Palms, Codiaeums, Dracaena deremensis, hybrids of Fuchsia triphylla, Ferns, Rex Begonias, Liliums and several kinds of Orchids.

The Cavendish Cup, the second award, was obtained by Messrs. Sutton and Sons who filled one end of a large tent with a pleasing arrangement of well-grown Sweet Peas.

The Sunningend Cup offered for the best display of Carnations was won by Messrs. C. Engelmann, with a grand exhibit in which Laddie, Red Laddie and Saffron were well represented.

Other awards were as follow:—

Large Gold Medals.—To Messrs. J. Cypher and Sons, for stove and greenhouse plants; to Messrs. Sutton and Sons, for Sweet Peas; and to Mr. W. Walters, Colesborne Gardens, for an unusually interesting collection of the rarer hardy flowers in which we noticed Anomatheca cruenta alba, Heeria elegans, and Carmichaelia sp., with Cypripedium spectabile, Lilium Farreri, L. regale, Crinum Powellii, Iris albo-purpurea, and Gillenia trifoliata.

Gold Medals.—To Mr. Wells, Jnr. for Delphiniums and other hardy flowers; to Messrs. Toogoods' for Gladioli, etc.; to Messrs. Allwood Brothers, for Carnations and Dianthi; to Messrs. Bowles and Skarratt, for Lily-pool and rock-garden; and to Messrs. W. Simpson and Sons, for Antirrhinums and Lupins.

Silver-Gilt Medals.—To Messrs. Blackmore and Langdon, for Delphiniums and Begonias; to Mr. Evans, or hardy flowers; to Mr. Rich, for hardy flowers; to Messrs. Maxwell and Beale, for alpine plants; to Messrs. Fuller and Maylam, for Conifers; to Mr. Covill, for Hydrangeas; and to Messrs. Barnfield, for greenhouse plants.

Silver Medals.—To Messrs. Hewitt, for Delphiniums; to Mr. Gullick, for Sweet Peas; to Mr. H. Clarke, for Violas: to Cheltenham Co-operative Society, for fruits and vegetables; to Mr. R. J. Case, for Pelargoniums: to Messrs. J. White and Sons, for hardy flowers; to Mr. Hopwood and to Messrs. Bendall.

Trade Classes.

For a display of Roses arranged on a space twenty feet by five feet The Corporation of Cheltenham offered ten guineas as a first prize. Four competitors entered in this attractive class and their exhibits provided a delightful feast of beauty and fragrance. The premier award was made in favour of Messrs. Jefferies and Son, Cirencester, with a fine group in which the flowers of modern varieties were well displayed in pillars and bowls, the whole being pleasingly margined with wreaths of single Roses; second, Messrs. English, Gloucester; third, Messrs. Frazer and Son, Malvern.

Equally interesting and almost as effective were the groups of hardy flowers shown in the trade class for a display made on a space twenty-five feet by six feet. Here, again, the Corporation of Cheltenham offered ten guineas as a first prize, and this award was won by Mr. Gullick, Salisbury, who had a delightful arrangement in which Delphiniums, Pinks and varieties of Scabiosa caucasica were outstanding features. There was a little crowding in the foreground, but otherwise the exhibit was a very artistic one. Second prize was awarded to Messrs. Bowell and Skarratt, and third to Mr. Hopwood.

Plants.

Three exhibitors competed for the prizes offered for the best arrangement of miscellaneous plants on a space of one hundred square feet. Mrs. E. Butler was easily first with an artistic association of Palms, Selaginellas, Liliums, Odontoglossums, Fuchsia triphylla, Phyllanthus nivosus, Clerodendron fallax and other useful plants; second, H. Bagnall, Esq.; third, Mr. Barford.

Mrs. Butler, a successful exhibitor, also secured the chief award for six stove and greenhouse plants with a capital set of six well-grown examples of the brilliant Clerodendron fallax. The same lady was also first prize winner in the class for six Ferns, with an Adiantum and some large plants of Nephrolepis.

Hardy Flowers.

Mr. B. A. Bowes won first prize from five other competitors for the best display of hardy garden flowers arranged on a space twelve feet by four feet; Irises, Delphiniums, Erigerons and Saxifragas were prominent subjects in this good collection; second, the Misses Fawkes; third, Mr. J. Sladen. B. A. Bowes, Esq., showed the best six vases of hardy garden flowers and showed fine examples of Canterbury Bells, Delphiniums, Erigerons, Sweet Williams, Pentstemons, and Geums; second, H. Bagnol, Esq.

Mr. Jarratt Thorpe showed the best set of twelve vases of Sweet Peas and also the best six vases of those flowers, his blooms including good specimens of Charity, R. F. Felton, and Constance Hinton. Mrs. Butler was the most successful exhibitor of six vases of Carnations, and Mr. J. Sladen and Mrs. Hopcraft were first and second prize-winners respectively for a display of Pansies and Violas.

Delphiniums were not especially good. but E. B. Jolling, Esq., led for six vases of these popular flowers with fair spikes; second, Mr. J. Sladen. Mr. J. Chamner and Col. Littlewood were placed first and second respectively for three vases of Delphiniums. Canterbury Bells were shown well, and Mr. Bowes led with capital examples; second Mr. F. C. Pall.

In the amateurs' class for a group of cut Roses on a space five feet by four feet, there were seven competitors. This was open to amateurs residing in Gloucestershire, Herefordshire or Worcestershire and exhibitors had to guarantee that the flowers they exhibited were of their own growing. Many of the displays were poor and indicated pluck rather than skilful cultivation. S. Lawrence, Esq., had no difficulty in winning the first prize which included a Silver Rose Bowl, with a display wherein the blooms were of good size and quite fresh; second, Mrs. Hopcraft. Mr. Graham led for a dozen vases of decorative Roses, and Mrs. Hopcraft led for six vases of decorative Roses, showing fresh examples of Mrs. J. Lynas, and Mrs. A. Tate, among others; Mrs. Marston came second in the latter class.

Floral Decorations.

The numerous exhibits and the keen competition in the decorative classes made this one of the most interesting sections of the show and one of superlative interest to lady visitors.

Mr. G. Dimmer offered a pair of silver vases in the principal class for a table decoration of any flowers other than Sweet Peas; to this prize a sum of £4 was added. Premier award was made in favour of Mrs. J. Nixon, whose light and bright arrangement consisted of Cypripediums, a few Cattleyas, Thunias, Honeysuckle, and Mimulus glutinosus; second, Mrs. Cheeseman, who used Heuchera semperflorens, Begonias and blue Marguerites in dainty fashion; third, Mrs. J. Burdon, who had low bowls of Carpentaria californica associated with Nepeta Mussenii; fourth, Miss J. Zelby, who had Ophelia Roses who made the mistake of associating her flowers with coloured Selaginella caesia and small Stipa plumes. There were over a dozen entries in this class.

Mrs. Colston Hale, Warminster, won the chief award in the class for a table decoration of Sweet Peas, using deep pink and cream varieties; second, Mrs. John Nixon, with cream and white flowers; third, Mrs. Machelroy, with mauve flowers.

In the class open only to ladies residing within ten miles of Cheltenham, Mrs. E. L. Jones had the best table decoration of any kind of flowers, and she was successful with blush Carnations, Gypsophila and pale yellow Columbines—a very pleasing exhibit; second, Mrs. Machelroy.

Mrs. J. Nixon led in the class for a basket of cut flowers with a blending of Clarkias, Pentstemons and Sweet Peas; second, Mrs. Colston Hale with orange and purple Sweet Peas. Mrs. Hopcraft showed the best vase or bowl of Roses, with Mrs. Graham a good second. The best basket of Roses, mixed blooms, was shown by Mrs. Moore, who was followed by Mrs. Colston Hale in a keen competition.

GUILDFORD AND DISTRICT GARDENERS'.

A visit by members of this association to Tangley Park is becoming an annual event. On the last occasion, July, 1925, Mrs. Hamilton Fellowes gave the society a special invitation to come again in June when Rhododendrons are such a prominent feature. On the day fixed, Saturday, June 12, the surprising number of one-hundred-and-sixty-five members attended the outing. This is the more remarkable when the stormy weather is considered.

The pelting rain of the morning ceased just in time, and everybody seemed eager to seize the joyous moments afforded by a sunny afternoon.

Mr. C. Hebbourn, the gardener, conducted the visitors around these compact well-arranged, well-kept, and well-stocked grounds and houses. The Rhododendrons had suffered from the un-summerlike days of June, but one fine clump on the lawn had preserved its pristine beauty. Some of the beds and borders have not yet unfolded their summer grace and charm, but each garden lover could find his peculiar delight. The fragrance of the Pinks, the grass walk lined with a beautiful grey-green of shimmering Firs, the Picea pungens glauca, or the gems peeping forth from nooks and crannies in the rock gardens were all delightful.

In the houses Gloxinias and Hydrangeas were good. In one corner the Black Prince took pride of place among the Pelargoniums, and the entry into another house was like stepping into a burst of sunshine, as a large group of Calceolarias Clibranii shed a golden radiance all round. In another house a superb collection of Caladiums, for which the place is famous, captured the admiration of all visitors.

A large marquee had been erected, and Mrs. Hamilton Fellowes, as her custom is, had spread a table for her guests, and around this in due course, was gathered the smiling faces of a happy company. The only shadow cast was the knowledge that owing to ill-health our benevolent hostess could not be present.

The president expressed a heartfelt wish for her speedy restoration to health, coupled with sincere thanks for the favours bestowed that day.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT.

At the monthly meeting of this society, held at the R.H.S. Hall, on June 14, Mr. Charles H. Curtis presided and three new members were elected. Interest withdrawn by four members amounted to £18 8s. 10s., and four members over seventy years withdrew from their deposit sums amounting to £56 19s. 10d., while the sum of £138 12s. 3d. was passed for payment to the nominees of three deceased members.

The sick pay for the month on the private side came to £60 14s. 4d., and on the State section to £58 9s. 2d.; maternity claims totalled £13 10s. 0d. The sum of £30 5s. 6d. was granted to seven members for dental, optical and surgical treatment, and ten other cases for special treatment were considered.

Obituary.

Sir John R. Gladstone.—The death is announced after a long and painful illness, of Sir John Robert Gladstone, third baronet of Fasque and Balfour, Kincardineshire. Born in 1852, the deceased was educated at Eton and at Christ Church College, Oxford, and thereafter joined the army. He took part in several campaigns, and on the death of his father, in 1889, he retired from the army to assume the proprietorship of Fasque and Balfour. It was a goodly heritage, the possessions including nearly 50,000 acres of land, and making him the largest landed proprietor in Kincardineshire. For the long period of thirty-six years Sir John devoted himself wholly to the management of his property and to local and county affairs. But it is for the fine work he did for Scottish forestry he will be best remembered. His abilities as a practical forester and his enthusiasm in the cause amounted to almost an obsession. For many years he was a member of the Royal Scottish Arboricultural Society, and there was little surprise when he became president of that body. With the great facilities at his command, Sir John was in a position to make many valuable and useful experiments among the trees he loved so well. With estates extending for nigh twenty miles over mountain, river and glen, and with so many varying soils, Sir John never missed an opportunity to glean at first hand the secrets of the forest and woodland. His experience and inferences were always at the command of his fellow forester, and rarely did he miss a meeting of the Aberdeen branch of the Royal Scottish Arboricultural Society. For years he was Chairman of the branch until asked to come up higher and take over the presidentship of the parent body, with headquarters in Edinburgh. But this did not abate one jot his interest in the Aberdeen branch, where his kindly counsel and advice were greatly appreciated. The geology, the flora and fauna of his estates were an absorbing study to him, and nothing gave him greater pleasure than to hear of some rare bird finding sanctuary on Fasque or Balfour. He spent vast sums of money on the rare and beautiful plants which adorn the grounds of Fasque, which, with his usual generosity, he threw open to the public so that others might enjoy their beauty. Sir John never married, and is succeeded by his cousin, Mr. John Evelyn Gladstone.

TRADE NOTES.

At all the early summer exhibitions throughout the country where hardy flowers are shown extensively, Lupins are invariably a strong feature, while at some exhibitions, such as at York, large groups of these popular flowers are staged by competitors. But one must see Lupins in the mass to thoroughly appreciate their great beauty and the diversity of colour, which are now produced by the best strains. The illustration reproduced in Fig. 11 represents Messrs Dickson and Robinson's Northern Strain, as growing in their trial grounds near Manchester. The length of the spikes and the robustness of the plants are evidence of the fine garden value of this particular strain.

The Board of Agriculture for Scotland is prepared to undertake the inspection of Potato crops during the growing season with a view to the issue of certificates or reports for the assistance of growers and merchants in complying with the requirements of (*a*) the Wart Disease of Potatos Order, 1923, of the Ministry of Agriculture and Fisheries, which governs the importation of Potatos into England and Wales; and (*b*) the Seeds Act, 1920, and the regulations issued thereunder.

As a general rule, application should not be made for the inspection of any crop unless it extends to a quarter-acre or more, but special consideration will be given to growers who have small stocks of new or scarce varieties.

No application will be accepted unless accompanied by a remittance for the full amount of the fee payable according to the following scale: (1) When the total area of the crops does not exceed two acres, an inclusive fee of 5s.; (2) When the total area of the crops exceeds two acres, at the rate of 2s. per acre or part of an acre.

Certificates will be granted in respect of growing crops of immune varieties which attain a standard of purity of not less than 99·5 per clent. These certificates will be numbered in a series, and the numbers will be prefixed by the letters "T. S." (denoting True Stock).

Reports will be issued in respect of other growing crops stating the percentage of purity within the following grades:—Grade B: Less than 99·5 per cent., but not less than 97 per cent. "Mixed Grade": Less than 97 per cent.

Reports will be issued in respect of growing crops stating that the percentage of purity of non-immune varieties within the following grades.—Grade "A": Not less than 99·5 per cent. Grade "B": Less than 99·5 per cent., but not less than 97 per cent. "Mixed Grade": Less than 97 per cent.

Arrangements have also been made for the inspection for freedom from Wart Disease of crops growing on farms which are situated within a district that has been scheduled as an "infected area," for the purpose of the Order governing the importation of Potatos into England and Wales.

Forms of application for the inspection of crops may be obtained from the Secretary of the Board, York Buildings, Queen Street, Edinburgh. Applications made after June 19 will not be accepted unless accompanied by a double fee, but no guarantee can be given that the inspection will be undertaken in such cases.

Readers requiring information and advice respecting Patents, Trade Marks or Designs, should apply to Messrs. Rayner and Co., Patent Agents, of 5, Chancery Lane, London, who will give free advice to readers mentioning this paper.

ANSWERS TO CORRESPONDENTS.

Names of Plants.—*A. B.* 1, Rubus deliciosus; 2, Spiraea Veitchiana; 3, Spiraea cantoniensis. *R. L. B.* 1, Silene pendula; 2, Lychnis Viscaria; 3, Cedrus atlantica; 4, C. Deodora; 5, Cupressus Lawsoniana; 6, Libocedrus decurrens. *I. N.* Probably Crataegus orientalis.

Plum Spurs Diseased.—*G. W.* The trouble is due to the fungus disease known as brown rot. All the dead wood should be cut off and burned now. Spraying in winter, when the trees are quite dormant, with one of the new tar-oil washes, helps to control this disease, but it may not reappear next year in any case.

Potato Haulm Injured.—*M. S.* The injury to the Potato haulm resembles that caused by frost. It is impossible to determine any parasite that may be present unless bases of the stems are sent.

Propagation of Kentias, etc.—*C. B. P.* Kentia Fosteriana and Phoenix canariensis are propagated from imported seeds, although very large numbers of plants sold in this country are grown from seedlings raised on the Continent. Araucarias are propagated by cuttings. Standard Bay trees are kept in shape by regular pinching or cutting of the growths.

Peach Salway.—*A. W.* Salway is a large, late, yellow-fleshed Peach of second-rate quality, and has not maintained the high character it appeared to possess when first introduced. There are many better Peaches for planting in such a house as you have. It is generally admitted that this Peach needs artificial fertilisation either with its own pollen or, better still, with foreign pollen, and many experienced growers are of opinion that the use of pollen from another variety adds weight to the fruits and prevents dropping and splitting of the stones when the fruits begin to ripen. The fruits sent either lack the advantage of cross pollenation or more lime is needed in the soil. If the drainage is good the corrective agents are old lime rubble burnt earth and brick rubble, with a good sprinkling of bone-meal when top-dressing takes place in the autumn.

Pruning Laurels and Yews.—*J. B.* The best time to prune Laurels is in May or early June, when the first growth is nearly, or quite developed. Following the pruning, short, regular growths will develop, which will furnish the plants until the following spring. Yews should be clipped in March or early April before growth commences, as, being of slow growth, they require the full season for proper development.

Communications Received.—W. R. B.—G. R. A. S. J. G. S.—A. B.—A. M.—W. T. L.—R. L.—A. M.—W. A. B.—F. F.—F. J. F.—A. C.—J. R.—R. R. S.—E. H.—Doncaster.—J. S. B.—C. S. & C. —G. J. B.—E. R.

GARDENING APPOINTMENT.

Mr. T. H. Budgen, for the past two years gardener to General Holdsworth, Glynde Place, Lewes, as gardener to Colonel R. V. Gwynne, D.S.O., Folkington Manor, Polegate, Sussex. (Thanks for 2s. for R.G.O.F. Box.—Eds.).

MARKETS.

COVENT GARDEN, Tuesday, June 29, 1926.

Plants in Pots, etc.: Average Wholesale Prices.

(All 48's except where otherwise stated).

	s. d. s. d.
Adiantum cuneatum per doz. ...	10 0–12 0
—elegans ...	12 0–15 0
Aralia Sieboldii	9 0–10 0
Araucarias, per doz.	30 0–42 0
Asparagus plumosus	12 0–18 0
—Sprengeri ...	12 0–18 0
Aspidistra, green	36 0–60 0
Asplenium, per doz.	12 0–18 0
—32's	24 0–30 0
—nidus	12 0–15 0
Cacti, per tray —12's, 15's ...	5 0—7 0
Crassulas, 48's, per doz. ...	24 0–30 0
Crotons, per doz.	30 0–45 0
Cyrtomium ...	10 0–25 0
Erica coccinea, 48's per doz.	24 0–30 0
—Cavendishii, 48's. per doz. ...	30 0–36 0
Fuchsias, 48's per doz. ...	12 0–18 0
Heliotrope, 48's, per doz. ...	12 0–15 0
Hydrangeas, pink, 48's, per doz.	24 0–30 0
—white, 48's per doz.	24 0–27 0
—blue, 48's, per doz.	24 0–36 0
Ivy Geranium, 48's, per doz.	15 0–18 0
—60's per doz. ...	9 0–12 0
Lilium longiflorum (Harrisii) 48's, 32's, per doz.	21 0–30 0
Marguerites, 48's per doz. ...	18 0–21 0
Nephrolepsis in variety ...	12 0–18 0
—32's	24 0–36 0
Palms, Kentia	30 0–48 0
—60's	15 0–18 0
Pteris, in variety	10 0–15 0
—large, 60's ...	5 0—6 0
—small	4 0—5 0
—72's, per tray of 15's	2 6—3 0
Rhodanthe, 48's, per doz. ...	12 0–15 0
Roses, Polyantha 48's, per. doz.	24 0–30 0
—Rambler, various sizes each	7 6 25 0
Stocks, white and coloured 48's per doz.	15 0–18 0
Verbena Miss Willmott, 48's, per doz. ...	18 0–21 0

Cut Flowers, etc.: Average Wholesale Prices.

	s. d. s. d.
Adiantum decorum, doz. bun.	9 0–10 0
cuneatum, per doz. bun. ...	8 0–10 0
Alstroemeria, per doz. bun.	9 0–10 0
Arums (Richardias) per doz.	5 0—6 0
Asparagus plumosus, per bun., long trails, 6's	2 0—3 0
med. sprays	1 6—2 6
short	0 9—1 3
—Sprengeri, bun. long sprays...	1 6—2 0
med. „ ...	1 0—1 6
short „ ...	0 4—1 0
Carnations, per doz. blooms .	2 6—4 0
Coreopsis, per doz. bun.... ...	4 0—5 0
Cornflower, pink, per doz. bun.	3 0—4 0
—blue, per doz. bun.	1 6—2 0
Croton leaves per doz. ...	1 9—2 6
Daisy Giant White, per doz. bun....	2 6—3 6
Fern, French, per doz. bun.	10 0–12 0
Forget-me-not, per doz. bun.	6 0—8 0
Gaillardias, per doz. bun. ...	4 0—5 0
Gardenias, 12's, 18's, per box	5 0—6 0
Gladiolus, The Bride, per doz. bun.	12 0–18 0
—primulinus 6's, per doz. bun....	15 0–18 0
—Blushing Bride, per doz. bun...	9 0–15 0
—Peach Blossom, per doz. bun.	9 0–15 0
—various Giant varieties, per doz. spikes ...	4 0—6 0
Gypsophila ...	4 0—5 0
Heather, white, per doz. bun.	10 0–12 0
pink, per doz. bun.	9 0–12 0
Iceland Poppies, per doz. bun.	2 6—3 0
Iris, blue, per doz. bun. ...	9 0–12 0
—mauve, per doz. bun. ...	9 0–12 0
Lapageria, white, per doz. blooms	3 6—4 0
Lilium longiflorum long, per doz.	3 6—4 0
Lilium speciosum rubrum, long, per doz. blooms ...	4 0—4 6
—short doz. blooms ...	3 6—4 0
—lancifolium album, per doz. blooms ...	5 0—6 0
Lily-of-the-Valley, per doz. bun.	18 0–30 0
Nigella, blue, per doz. bun. ...	4 0—6 0
Orchids, per doz. —Cattleyas ...	30 0–36 0
Pinks, white per doz. bun. ...	3 0—6 0
Roses, per doz. blooms—	
—Madame Abel Chatenay ...	2 0—2 6
—Molly Sharman Crawford	2 6—3 6
—Richmond ...	2 0—3 0
—Columbia ...	2 6—3 0
—Golden Ophelia	3 0—4 0
—Sunburst ...	2 0—3 6
—Mrs. Aaron Ward	2 0—2 6
—Madame Butterfly	2 0—3 0
Scabiosa caucasica, per doz. bun....	4 0—5 0
Smilax, per doz. trails	5 0—6 0
Statice sinuata per doz. bun.	3 0—4 0
—Suworowii ...	12 0—18 0
Stephanotis, per 72 pips... ...	3 0—3 6
Stock, double white, per doz. bun.	8 0–12 0
Sultan, white per doz. bun.	9 0–12 0
—yellow, per doz. bun...	— —
—mauve, per doz. bun.	10 0–12 0
Sweet Peas, per doz. bun. ...	6 0–18 0
Violas	1 0—1 6

REMARKS.—Supplies and prices have fluctuated during the past week. On Saturday last supplies were generally short and prices advanced for most subjects, especially Carnations, Roses, Sweet Peas and Lilium longiflorum. Prices for Roses are still advancing; the red blooms are only medium in quality. The newest subjects in this department are Alstroemeria and Saponaria. There is a glut of Delphiniums. Paeonies are practically over for this season. Spanish Irises are also over. Some fine blooms of English Irises in blue and mauve are taking their place. Big consignments of these blooms are also arriving from Holland. Large-flowered Gladioli have commenced to arrive from the Dutch growers, also some fine blooms of yellow and red Ranunculus.

Vegetables: Average Wholesale Prices.

	s. d. s. d.
Beans—	
—Guernsey and Worthing forced	1 6—1 9
Beets, per cwt.	7 6—9 0
Cabbage, per doz.	1 6—2 0
Carrots, new, per doz. bundles	4 0—8 0
Cauliflowers, per doz.	3 0—5 0
Cucumbers, per doz.	3 0—4 6
—Flats	6 0–12 0
Horseradish, per bundle ...	1 6—2 0
Lettuce, round, per doz. ...	1 0—2 0
Marrows, forced per doz. ...	6 0—9 0
—Outdoor... ...	3 0—5 0
Mint	1 6—2 0
Mushrooms,	
—cups ...	2 0—2 6
—Broilers ...	1 0—2 0
Onions—	
—Egyptian ...	— 12 0
Parsnips, per cwt.	5 0—6 0
Peas, English per bushel. ...	10 0–12 0
—French, per bag	2 6—3 6
Potatos—	
—King Edward per cwt. ...	6 0—7 0
—others	4 0—5 0
New Potatos—	
—St. Malo ...	7 6—8 6
—Azores, per case	4 0—6 0
Rhubarb, Outdoor, per doz.	8 0—9 0
Spinach, per bushel	3 0—4 0
Spring Greens, per bag ...	2 0—3 0
Tomatos—	
—English, pink,	6 6—7 6
—pink and white	6 6—7 6
—blue	5 6—6 0
—white	5 0—6 0
—Guernsey ...	— 7 0
Turnips, per cwt.	5 0—7 0
—new, per doz. bunches ...	6 0–10 0
Turnip Tops, per bag ...	3 6—4 0

Fruit: Average Wholesale Prices.

	s. d. s. d.
Apples, Victorian—	
—Granny Smith	15 0–16 0
Apples, New Zealand—	
—Sturmer ...	10 0–12 0
—Ballarat ...	— 12 0
—Dunn's ...	8 0–10 0
—Jonathan ...	9 0–10 0
Apples, Tasmanian	8 0–10 6
Apricots, Spanish per crate ...	7 6—9 0
—French, per ½ bar.	8 0–10 0
Bananas	14 0–22 6
Black Currants—	
—French, per boat ...	6 0–12 0
—English, per lb.	— 1 2
Currants, Red (French) per tray...	3 0—4 0
Figs, forced, per doz.	4 0–12 0
Gooseberries—	
—Kent, halves	2 6—4 0
Grape Fruit ...	35 0–50 0
Grapes, English Black Hamburgh	1 9—3 6
—Muscat ...	3 6—8 0
Lemons, Messina, per case ...	12 0–20 0
per box ...	8 0–15 0
—Naples, box	10 0–18 0
Melons—	
—Forced Guernsey specials ...	3 5—5 0
—others	2 0—4 0
Oranges—	
—Scilian, box	— 25 0
Peaches, Belgian, per doz. ...	4 0–10 0
Peaches, English, per doz. ...	6 0–18 0
Pines...	2 0—4 0
Plums, Spanish, per crate ...	10 0–12 0
—Mirabelle, per box	6 0—7 0
Strawberries, per 2 lb. chips ...	1 3—2 0
3 lb. „ ...	2 0—3 6

Trade has been variable during the past week but, considering the competition of Strawberries, the volume of business in other fruits has been fairly good. Peaches, Nectarines, Figs, Grapes and Melons have sold at satisfactory prices, the fine weather being an important factor in their sale. Apples are quoted cheaper. English Cherries are not very good at the moment and some improvement in their quality is hoped for. Gooseberries are a poor trade. Peaches, Apricots, Plums, Gages and Cherries from the continent as well as Black Currants are all arriving in varied condition; very many of the Black Currants in particular are very poor in quality. Tomatos are increasing in supply but their prices remain steady. Cucumbers are a moderate trade. French Beans maintain fairly high prices for the time of year. Peas are more plentiful and cheaper. New Potatos are a moderate trade. St. Malo-grown tubers, if good, are in demand, but Jersey Potatos are a drag on the market at any price. The demand for Mushrooms has improved. Green vegetables are plentiful and cheap, while salads are selling freely.

GLASGOW.

The fruit market was very depressed during the greater part of the past week, and despite a moderate recovery on Friday, prices generally show a material decline from those of previous levels. At one time Strawberries were as low as 4½d. per lb., but better qualities sold at the following rates:—Scotch, 6d. to 10d.; Southampton, 7d. to 10d.; and Cheddar 9d. to 1/-. The slump in Spanish Oranges was very pronounced. Boxes of Double Cross Brand changed hands at 1/6 per box at an auction sale; others were worth about 3/-; and counts of 340, 240 and 200 ranged from 8/- to 16/-. Australian Apples also participated in the decline. Cleopatra, which was quoted in the previous week at 14/- to 16/- per case was obtainable at 8/- to 10/-, while Sturmer Pippin and Dunn's Favourite made from 7/- to 9/-. New Zealand Apples were not affected to the same extent, Statesman and Granny Smith realising 12/- to 14/-; Lord Wolseley, 10/- to 12/-; and Jonathan, 10/6 to 14/6. Australian Pears (Beurré Bose) averaged 7/- per tray, and 14/- to 16/- per half-case. Prices of other fruits were:—English Cherries, 19/- to 20/- half-bushel; Apricots, 7/- to 9/- per crate; Gooseberries, 5/- to 6/- half-bushel; Melons, 3/- to 6/- each; Black Hamburgh Grapes, 1/6 to 2/6 per lb.; and Grape Fruit, 40/- to 44/- per full case.

Heavy supplies of Lettuce far exceeded the demand, and as a consequence prices moved in favour of buyers at 1/- to 2/- per dozen. On the contrary, Tomatos were a little dearer at 10d. to 1/- per lb. for Scotch; 9d. to 10d. for English; and 8d. to 9½d. for Guernsey and Dutch. French Carrots and Turnips declined to 6d. and 8d. per bunch, and Cauliflowers to 2/- and 4/- per dozen, while the prices of Cucumbers kept steady at 3/- to 6/- per dozen. Mushrooms sold for 2/- per lb. Spring Onions made 1/- per bundle; French Beans realised 1/- to 1/6 per lb., Spinach 4/- per stone; Peas, 6/- to 6/6 per half-pot; Cabbage, 8d. to 1/3 per dozen; and Mint, 2/- to 3/-.

The feature of the cut flower market was the continued abundance of Irises, which sold so low as 1/- per box of 12 bunches. Medium quality blooms were worth 2d. to 4d. for 6's, and special quality, 4d. to 8d. for 12's. Ophelia and Madame Butterfly Roses averaged 1/6 per dozen, but Madame Abel Chatenay, Molly Sharman Crawford and Ophelia ranged from 2/- to 3/6. Carnations made 2/6 to 3/6 per dozen; Marguerites, 2/6 to 3/- dozen bunches. Paeony Roses, 10d. to 1/- for 6's; Pyrethrum, 3d. to 6d. per bunch; Gypsophila, 2d. to 3d.; special Sweet Peas, 1/3, ordinary, 8d. to 10d.; Lilium longiflorum (Harrissii), 3/6 to 4/-; and Asparagus Fern, 9d. to 1/-.

NEW HORTICULTURAL INVENTIONS.

LATEST PATENT APPLICATIONS.

14,832.—Howgate, J. H.—Lawn marker. June, 12.

13,938.—Belben, M.—Appliances for killing insects, etc. June 2.

13,707.—Kuxmann and Co., Komm.-Akt-Ges.—Machines for spreading artificial manure. May, 31.

13,876.—Williams, P.—Weedextractors. June 1.

13,187.—Dolton, E. T.—Means for supporting flowers, etc. May 25.

SPECIFICATIONS PUBLISHED.

237,561.—Martin, P.—Lawn Mowers.

252,884.—Reid, W. F.—Apparatus for destroying noxious insects.

237,256.—Roelofsz, C. M.—Composition for destroying insects and promoting the growth of fruit trees and other plants.

252,641.—Holman, J. S.—Hand-hoes.

215,218.—Morgan, T.—Lawn mowers.

Abstract Published.

Plant Protectors. *Patent No.* 250,595.

A system of fabric-covered frames for protecting plants, easily taken to pieces for storage, have been protected in this country by Mr. J. H. Cook, of 222½, Broadway, Paducah, Kentucky, U.S.A. In one form a complete protector consists of a fabric cover and upright transparent side members surrounded by fastening-members provided with removable resilient connecting elements. The fastening members consist of wires provided with end loops in which are hooked coiled connecting springs. The fabric cover is secured on the side members by the upper fastening wire.

These particulars of New Patents, of interest to readers, have been selected from the Official Journal of Patents, and are published by special permission of the Controller of H.M. Stationery Office.

Printed copies of the full Published Specifications may be obtained from the Patent Office, 25, Southampton Buildings, London, W.C.2, at the uniform price of 1s. each.

TRADE MARKS.

This list of Trade Marks, of interest to readers, has been selected from the Official Trade Marks Journal, and is published by permission of the Controller of H.M. Stationery Office.

GENZYME.

467,077.—Fertilisers.—Forsyth, Jones, and Co., Ltd., 14, Southampton Street, Covent Garden, London, W.C.2. June 9.

VERMOL.

466,374.—Fertilisers and Horticultural Preparations for destroying weeds, earthworms and insects.—C. G. Fox, and S. Stockell, 61, St. Mary Axe, London, E.C.3. June 2.

LYPTROL.

467,803.—Chemical Substances used for Agricultural and Horticultural purposes.—Lyptol, Ltd., 2, College Road, Harrow, Middlesex. June 2.

CULTERYSIN BRAND.

468,494.—Chemical Substances used for Agricultural and Horticultural purposes.—H. R. Napp, Ltd., 3 and 4, Clements Inn, Kingsway, London, W.C.2. May 26.

THE
Gardeners' Chronicle

No. 2063.—*SATURDAY, JULY* 10, 1926.

CONTENTS.

Brussels Sweet Pea Exhibition 22
Caprices of the season 21
Carnations, old-fashioned border ... 36
Chelsea Show... ... 21
Classical and legendary gardens 30
Fernery, the—
  Hardy Ferns for shady situations... 27
Florists' flowers—
  Fuchsias 29
Florists' Telegraph Delivery Association in Scotland... ... 22
Forestry—
  Trees injured by farm stock ... 32
"Gardeners' Chronicle" seventy-five years ago 23
Hardy flower border—
  Achillea formosa ... 27
  Lathyrus pubescens 27
  Lychnis Viscaria ... 27
  Potentilla atrosanguinea 28
Indoor plants—
  Bomareas 28
  Crassulas 28
Judging rock gardens 31
Mesembryanthemums 35
National Diploma in Horticulture ... 22
Plants new or noteworthy—
  Arctotis breviscapa 31
Orchid notes and gleanings—
  Laelio-Cattleya Lustre and its varieties and hybrids 28
Potato, intervarietal differences in the ... 32
Riddick, golden wedding of Mr. and Mrs. 22
R.H.S. examinations 22
Seed firm, jubilee of a 22
Societies—
  National Rose ... 37
  National Sweet Pea 38
  Royal Agricultural 38
  Torquay and District Gardeners' ... 38
Sulphur 33
Trees and shrubs—
  Cordylines in Scotland 29
  Erica australis ... 29
  Styrax Hemsleyanum 29
Valenciennes Flower Show... 23
Vegetable garden—
  Brassicas 36
Viola species in catalogues and lists ... 26
Week's work, the ... 24
Welsh garden, notes from a 26
Wild garden—
  Crambe cordifolia ... 28

ILLUSTRATIONS.

Arctotis breviscapa 31
Brown, Mr. C. H., portrait of 22
Cheiridopsis peculiaris 34, 35
Cordyline australis flowering in an Ayrshire garden ... 27
Ononis fruticosa 23
Pontederia cordata var. lanceolata 25
Potato leaf: showing non-rigid, drooping mid-rib, 32; close type of, 33; open type of 33
Styrax Hemsleyanum 29

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last fifty years at Greenwich, 63°

ACTUAL TEMPERATURE—
The Gardeners' Chronicle Office, 5, Tavistock Street, Covent Garden, London, Wednesday, July 7, 10 a.m. Bar. 29.9. Temp. 60°. Weather, Showery.

The Caprices of the Season.

GARDENERS, however much they may have had cause during recent years to complain of our climate, cannot deny that the practise of their art in this country has a spice of high adventure. Each season brings forth surprises, and of all recent summers this present one has been productive of most. Of the surprises, moreover, by no means all are painful. It is true that after a promise of great fruitfulness tree fruits are making in most gardens but a poor showing. Pears, for example, blossomed so freely and set so well that the sanguine gardener was encouraged to expect a large yield. Nor have the expectations proved vain in all cases. Where the trees had shelter the crop is good, but in many exposed gardens it is almost a failure. Even more generally have the Apples belied their promise. They, too, showed plenty of blossom buds, but the time of opening of the flowers coincided with wet and cold weather with the result that, save in the case of some varieties, there is but a sprinkle of fruit where abundance was looked for. We ourselves have seen no more striking example of seasonal capriciousness than that presented by a long border facing south and protected on the north by a high Hornbeam hedge. On either side of the border are espaliers—Apple, Plum, Peach, Nectarine and Apricot. Of the Plums (Coe's Golden Drop) which the gardener was careful to pollenate, there is a heavy crop, albeit that aphis has damaged the foliage severely and that in spite of nicotine wash. On the Apples, chiefly Cox's Orange Pippin, there are but few fruits, but on the Peaches and Nectarines which have had no artificial protection there is quite a good crop. The Apricots near by have no fruits, thereby exemplifying the garden saying that "where Peaches flourish, Apricots will not." Further, down in the same garden the vegetable crops are at last beginning to yield produce which in normal years would have been available weeks ago. Early Peas—Pioneer and Little Marvel—are now, on July 1, yielding their pods, and curiously enough are showing a heavy crop. Broad Beans are still far behind the time-table and look as though they would not produce a dish for a week or more. Yet, higher up, in the flower garden, plants have never been so forward, nor so floriferous, indeed, it is hard to know which most to wonder at—the earliness or the plenitude of blossom. Some few of the earlier plants were, perhaps, disappointing. Dwarf double Gorse, the blossoms of which last usually a full three weeks were out and over in a week. Judas Trees produced a plenitude of rose-purple buds which, however, hung unopened for a fortnight of cold wet weather and then, still unopened, fell to the ground. But these slight *contretemps* were far more than set off by the general riot of blossom. The Brooms, for example, flouted the weather, the common white and yellow, the mahogany and gold Andreanus and the beautiful pink Cytisus Dallimorei flowered more profusely than they have done for many a year. Already by the end of June the "hardy" Veronicas—killed to the ground in more exposed gardens, but untouched in favoured spots—were flowering with such copiousness as to place them among the most conspicuous objects of the garden. In despite of the wet and cold of May and early June, Rock Roses and Cistuses are performing with incessant vigour the daily miracle of evanescent flower production. Conspicuous among them is the relatively new hybrid known as Silver Queen, pink-flowering, with somewhat crumpled petals, suggesting that Cistus vaginatus is to be reckoned in its parentage, and remarkable in that in the early afternoon of sunny days, when C. corbariensis, C. crispus, C. florentinus, C. villosus and the rest have littered the ground with their daily discard of petals, it, though in full sun, still bravely bears its blossoms and goes on bearing them until the setting in of evening. This year's precocity of flowering is even more wonderful than the profusion. Many late July and August flowering plants are already in full bloom. Spartium junceum was blossoming in the third week of June, scenting the air of the garden with its heavy, honey fragrance. The climbing Polygonums, P. baldschuanicum and P. Aubertii were in full blossom before June was past, and even the smaller rock-garden Polygonum, P. vaccinifolium, usually an ornament of autumn, was then coming into blossom. So it is with Leycesteria formosa, even before its arching branches had made anything like their full growth they were showing blossom buds. The list might be extended, albeit that exceptions also might be named. Yet the exceptions are relatively rare and only emphasise the fact of precocious capriciousness. To what this phenomenon may be ascribed it is hard to suggest, but the opinion forces itself on the mind that in the present earliness of blossom we are witnessing the effect of the hard frosts of the past winter. It is well-known that whereas late winter frosts do nothing to accelerate the time of flowering of plants, those frosts which come earlier have the magical property of removing the self-imposed ban which plants place on their own development. It has been shown also that it is possible so to time the application of cold to early-flowering plants as to make them either flower prematurely or to skip flowering altogether and to break into full leaf before the normal time. It may therefore be conjectured, albeit with no great certainty, that the severe frosts of January happened to occur at a critical moment in which they might and did act as forcing agents to the plants. It is at all events evident that the prolonged wetness and low temperature of the present spring must have tended to delay blossoming time and that being so it is necessary to look to previous circumstances to account for the present profusion. Whatever be the explanation, gardeners can at all events take pleasure in the fact, for surely a garden is indeed a benefaction when in such a season of hard caprice as that of the past spring, it can rise superior to circumstance and give of its beauty in more than ordinary measure during a period when the encouragement of beauty is most needed. Looking back on this kindly capriciousness and remembering the incessant struggle with the weeds and with the slugs, the good gardener may well remember the reflection of one who from his writings was evidently one of his craft . . . . "there be some sports are painful, and their labour Delight in them sets off."

Chelsea Show.

THE Council of the Royal Horticultural Society has, we think very wisely and properly, taken steps to consult exhibitors on the subject of the details of the time of holding the Chelsea Show. As our readers will remember, according to the old arrangements, the show is held on a Tuesday, Wednesday, and Thursday and opened to the Fellows at noon on Tuesday and to the public at 2 p.m. In this arrangement the staging of exhibits is required to be completed by 8.30. a.m. on the Tuesday and the judging to be done between that hour and noon. The new proposal on which the opinion of exhibitors is sought, is that the show should be held on a Wednesday, Thursday and Friday and that it should be opened to Fellows at 9 a.m. on the Wednesday and to the public at 2 p.m. If this time-table were adopted the staging of exhibits would have to be completed by 3 p.m. on Tuesday at which hour the judging of the exhibits would commence. Inasmuch as the ultimate success of the Chelsea Show depends upon the perfection of the exhibits, the proposition which the Council has propounded must be left to the decision of the exhibitors themselves, for they alone are in a position to know how the transport arrangements at their disposal fit in with the new proposal. At the same time, in looking at the matter from the point of view of the Fellows of the Society and the general public, there are manifest advantages in the new proposal; chief among these advantages are that it would give the cool of the evening instead of the heat of the morning for the deliberation of the judges. In the second place it would permit of the show being a fully finished exhibition by the time it was opened; the awards to be distributed and displayed, which would, of course, add considerably to the interest of the early visitor; and, in the third place, it would give the Fellows a full morning instead of two hours in the middle of the day for a leisurely inspection of the exhibits. In deciding to admit the public at 2 p.m. the Council may have considered alternatives and judged that this is the most convenient hour. We would suggest, however, as being worthy of consideration, that if the new proposal be adopted, the public might be admitted at 1 p.m., instead of 2 p.m. A most enthusiastic public would certainly be willing to advance the hour of their lunch in order to obtain a view of the exhibition before large crowds make sight-seeing difficult and close inspection almost impossible.

Royal Gardeners' Orphan Fund.—We venture to remind our readers of the claims of this garden charity and the opportunity afforded by the Annual Festival Dinner, of rendering financial assistance. The Dinner is to be held on July 14, at 7 p.m., at the Hotel Victoria, Northumberland Avenue, when G. J. Nicholls, Esq., C.C., F.R.C.I., will preside.

Jubilee of a Seed Firm.—Fifty years ago Mr. Alfred Watkins and Mr. Simpson commenced business as wholesale seedsmen in the neighbourhood of Covert Garden. Careful attention to purity of stocks and high germinating power in the seeds they offered brought them many customers, and ere long larger premises were needed. The business increased steadily, and for a long number of years was under the guiding hand solely of Mr. A. Watkins. Eventually, fine premises were built in Drury Lane and trial grounds acquired at Feltham and Twickenham. The story of the rise of this business from small beginnings has been related in these pages and it was told very briefly by Mr. Alfred Watkins on Friday, July 2, when his firm celebrated its jubilee. The auspicious occasion was commemorated by a river trip by steam launch from Reading to Windsor, to which all the employees and a few friends were invited. Both in regard to weather, hospitality and general arrangements, the day was a perfect one, and no one enjoyed it more whole-heartedly than Mr. and Mrs. Alfred Watkins, whom everyone was delighted to find in excellent health. We congratulate them on the success achieved during half-a-century, and congratulate the employees on having such sympathetic employers as Mr. Alfred Watkins and his two co-directors, Mr. Bridgeford and Mr. Howard, the former of whom, in conjunction with Mr. Horton, carried out all the arrangements on July 2.

National Diploma in Horticulture.—The Royal Horticultural Society's National Diploma in Horticulture has been awarded to the following as a result of the written and practical examinations for the Diploma held this season.—Section 1: General Horticulture.—Mr. William Macdonald Campbell, c/o The University, Edgbaston, Birmingham; Miss Winifred A. Crafer, Milton Rectory, Cambridge; Mr. Walter R. Pearson, 278, Yardley Road, South Yardley, Birmingham. The following have also passed the Preliminary Examination and will be eligible to take the Final Examination when they have completed the necessary six years of practical experience in gardening:—Miss E. M. Basford, Studley College, Warwickshire; Mr. Gilbert B. Begg, St. Patrick's Hall, Reading; Mr. Harry E. Brooks, Chewton Priory Gardens, Chewton Mendip, Bath; Mr. Nathaniel Catchpole, 120, Osborne Road, Brighton; Miss Kathleen Clarke, 1, Claremont Terrace, Hextable; Mr. David Crosland, New House, Outlane, Huddersfield; Mr. W. H. Fentiman, 1, The Green, Ripley, Surrey; Miss A. M. Ferguson, Crown Point Gardens, Norwich; Miss D. Garstang, Studley College, Warwickshire; Miss M. V. Grimes, White Hall, Long Itchington, Rugby; Miss E. W. Higginbotham, Manor House, Fallibroome, Macclesfield; Mr. Walter L. Holden, 56, Bayley Road, Dartford; Mr. Raymond W. B. Keene, Oaklands, Hatfield Road, St. Albans; Mr. Arthur P. King, University College, Reading; Mr. Ernest S. Mutton, 4, Queen's Mead Road, Bromley, Kent; Miss Annie Newton, Martindale, Tubbenden Lane, Farnborough; Mr. Edgar R. Saltmarsh, University College, Reading; Miss R. Stockdale, Studley College, Warwickshire.

Florists' Telegraph Delivery Association in Scotland.—Mr. C. H. Brown, New York, and Mr. Albert E. Pochelon, Detroit, who have been touring Europe during the past two months, in the interests of the Florists' Telegraph Delivery Association, recently returned to Great Britain, and paid a short visit to Scotland. Accompanied by Mr. Joseph Dobson, the late President of the British unit, they called on the individual members resident in Glasgow and Edinburgh, and also spent one day on a motor run through the Highlands. After luncheon, which was served at the Tarbert Hotel, Loch Lomond, Mr. Dobson extended a hearty welcome to the American officials, and expressed the hope that their visit would stimulate enthusiasm among the members and that they would take away pleasant recollections of their visit to Scotland. After paying tribute to the grandeur of the Highland scenery, Mr. Brown spoke hopefully of the future of their international organisation. Mr. Pochelon, in the course of his remarks, referred to the unsatisfactory position of the florists' trade, and urged on the members the necessity of obtaining a better standing and being more recognised. They had enjoyed every minute of their stay in this country, and now, when they were about to leave the British Isles, they could honestly say that they had seen no more beautiful spot than the Highlands of Scotland. The remainder of the route lay through the pass of Glenogle to Lochearnhead, thence to Strathcyre, Callender and Stirling, to Glasgow. Messrs. Brown and Pochelon returned to London on Friday, July 2, and sailed from Southampton the following day for New York.

MR. C. H. BROWN,
President of the Florists' Telegraph Delivery Association.

Royal Horticultural Society's Examination.—In the general examination for senior candidates, 149 were examined, and of these fifteen were placed in the first class, thirty-seven in the second class, and thirty-eight in the third class, leaving fifty-nine who failed to satisfy the examiners. The latter report that the standard of knowledge in the answers to questions on the cultivation of Vines, Peaches and Nectarines under glass, and the best varieties of dessert and culinary Apples and dessert Pears, etc., were very good. Answers relating to herbaceous borders of entirely blue-flowering plants and to flowering shrubs for spring effect were disappointing. In the examination of juniors, of the twenty-seven candidates who were examined, four failed and of the others five were placed in the first class, thirteen in the second class and five in the third class. The examiners report that the general standard of the answers on principles was fairly satisfactory, although some candidates were unable to express their knowledge simply and clearly. The Teachers' Examination in School and Cottage Gardening was held on March 27. Of the 256 candidates who were examined, sixty-nine were placed in the first class, seventy-four in the second class, sixty-four in the third class and forty-nine failed. The examiners' reports indicate that the average of the papers was below the standard that might be expected from the candidates. Their answers at times displayed book knowledge not thoroughly digested rather than knowledge acquired from practical application. In the Teachers' Honours Examination in School and Cottage Gardening, the examiners report that of the four candidates who entered, one did not appear; the remaining three were examined and, on the whole, did good work. The examiners have recommended that these three candidates should pass, viz., Mr. David Crosland, New House, Outlane, Huddersfield; Mr. Walter S. Kemp, Balquhidder, Dagmar Avenue, Wembley, Middlesex; and Mr. Frederick W. Sibley, Llaithddu, Newtown, Montgomeryshire.

Condition of the Crops.—The following summary of the crops, furnished by the Ministry of Agriculture, indicates the conditions of the various crops on the scale of 100, excellent; 90, very good; 70, good: 60, fair; 50, moderate; 40, rather poor; 30, poor; 10, a failure. An average crop is indicated by the figure 67.—Apples, 37; Pears, 71; Early Cherries, 77; Late Cherries, 66; Cherry Plums, 36; other Plums, 51; Grapes, 70; Peaches (glass), 60; Peaches (open), 60; Red Currants, 72; Black Currants, 51; Gooseberries, 81; Strawberries, 59; Cucumbers, 61; Tomatos, 61; Melons, 65; Cabbages, 74; Cauliflower, 70; Early Potatos, 70; Broad Beans, 73; Carrots, 68; Peas, 72, Asparagus, 50; Lettuce, 60.

Golden Wedding of Mr. and Mrs. J. Riddick.—On the occasion of the fiftieth anniversary of their wedding on June 30, Mr. and Mrs. John Riddick, Ellangowan, Dumfries, were the recipients of many congratulations and good wishes. Mr. and Mrs. Riddick were married at Musselburgh on June 30, 1876. For many years Mr. Riddick occupied a prominent place among gardeners in the south-west of Scotland, where his services as judge at shows were in great request, and he took an active part in promoting movements for the advancement of horticulture. He was born at Townhead of Greenlaw, Crossmichael, Kirkcudbrightshire, and is now in his eightieth year, Mrs. Riddick being seventy-eight. Mr. Riddick began his gardening career as an apprentice under the late Mr. Gibson, at Parton, Kirkcudbrightshire. For a number of years he was gardener at Maxwellton House, Dumfriesshire, and Courance, in the same county. For thirty years he was gardener at Mavisgrove, Kirkcudbrightshire, and until his retirement a few years ago, was at Ellangowan, Dumfries. Although so advanced in years, Mr. and Mrs. Riddick are in good health, and many readers will join with us in wishing them many more years of happiness together.

Brussels Sweet Pea Exhibition.—The third Belgian Sweet Pea Show took place in Brussels in the Orangery of the Botanic Garden, on June 26, and proved very successful. It was opened by the Secretary of the Ministry of Agriculture, accompanied by M. van Orshoven, the Director of Horticulture, who was formally received by the Committee of the Sweet Pea Society and a number of distinguished Belgian horticulturists. As the Sweet Pea lends itself particularly to graceful arrangement and to pleasing colour schemes, the hall looked exceedingly beautiful, and all the exhibitors deserved congratulations on their displays. A number of valuable prizes were offered, and the Jules Simon Cup was won outright by M. Braem, of Adinkerke.

Honour for Capt. A. W. Hill.—The King's Birthday Honours' list includes the name of Capt. Arthur W. Hill, F.R.S., Director of the Royal Botanic Gardens, Kew, who has been made a C.M.G. Our readers will join with us in congratulating Dr. Hill on receiving this honour from His Majesty.

Valenciennes Flower Show.—The exhibition foreshadowed in our issue of May 15 (p. 352), duly took place from the June 26 to July 4 and was in every way a credit to its promoters, the Société d'Horticulture du Nord, comprising some 80,000 members. Two Congresses, one concerning the Rose, and one dealing with Pomology, were held in connection with the Exhibition, and the usual social events, for which the French are so famous, were thoroughly appreciated by the visitors, among whom was Sir William Lawrence, representing the English Royal Horticultural Society. The exhibition itself was a very representative one, and reflected every credit on the growers who contributed their specialities. Perhaps it is unnecessary to state that the famous firm of Vilmorin - Andrieux, of Paris, won the highest honours, including the Grand Prix of the King of the Belgians, for their excellent exhibit of vegetables and other produce. The Flandria Co. was distinguished by gaining the Grand Prix d'Honneur given by the President of the French Republic. Perhaps the outstanding feature of the exhibition was the Orchid and decorative plant salon, largely contributed from Ghent. For a beautiful collection of one hundred different Orchids, the exhibitor, Dr. Ballion, was awarded the President's Grand Prix d'Honneur, and also the large Gold Medal of the Royal Horticultural Society (of London).

Holland County Potato Show.—The Holland County Potato Show will be held in Boston on Thursday, October 28, 1926. Eleven Challenge Cups will be offered for competition valued from 10 guineas to 25 guineas. Four Gold Medals and three Silver Medals are also offered. Medals are offered for trade exhibits of Potatos, general trade exhibits, and for new or improved implements used in the cultivation of the Potato. The Potato classes include seed, ware, collections and single dishes. Many of the classes are open to growers in Great Britain. The Secretary is Mr. J. C. Wallace, the Agricultural Institute, Kirton, near Boston, Lincolnshire.

Appointments for the Ensuing Week.—Monday, July 12: United Horticultural Benefit and Provident Society's meeting. Tuesday, July 13: Royal Horticultural Society's Committees meet; Peterborough Agricultural Society's show (three days); National Rose Society's Provincial show in connection with the Roundhay (Leeds) Horticultural Society's show (two days); Wolverhampton Floral Fête (three days); National Carnation and Picotee Society's show; Jersey Gardeners' Society's meeting. Wednesday, July 14: Royal Gardeners' Orphan Fund's annual festival dinner at the Hotel Victoria, London; Guildford and District Gardeners' Association's show; Weybridge, Walton-on-Thames and District Rose Society's show; Bath and District Horticultural Society's show (two days); Liverpool Horticultural Association's show (two days). Thursday, July 15: Kent County Agricultural Society's show (three days). Saturday, July 17: Elstree and District Horticultural Society's show; Worcester Park Horticultural Society's show.

"Gardeners' Chronicle" Seventy-five Years Ago.—*The Crystal Palace.*—The great question of the day, whether the Glass Palace, in Hyde Park, should be perpetuated as a monument to British skill and enterprise, and at the same time made subservient to other important objects; or whether, when its present purpose is fulfilled, it should be removed, lest it should be desecrated by being converted to any less noble use, appears not to have met with an unanimous response. And as this is a question which should be settled by popular suffrage, and upon which the people must speak, if they would have their rulers act, the matter is fairly open to discussion. It may surely be assumed that a winter garden, accessible to the resident and visiting population of the metropolis, would be an incalculable advantage. To deny this would be to deny the importance of any sanitary schemes. In a climate like that of England, especially, where, for two-thirds of the year, an invalid hardly dare breathe the free air, shelter, such as this building affords, and an atmospheric volume such as it contains, of so great magnitude as to be beyond the possibility of contamination from ordinary sources, would be a boon beyond description. But besides aëration for the valetudinarian, there would be exercise for both the sedentary and unoccupied; and there might also be instruction for those who sought it, and sensible amusement for all. Indeed, the advantages of retaining such a building, for such purposes, are so obvious and manifold, that one feels surprise that any other view of the matter should be seriously advocated. The Government, if need be, might even do worse than take the responsibility of repairs upon themselves; and as to the keeping, as the means will be forthcoming, so it cannot be doubted will be the man. Whether the building stands just where it ought to stand as a permanent structure, is another question. I, with many others, think it does not. These are questions upon which probably the public must express its opinion, before anything can or ought to be done; and the way to do this is of course by public meeting and petition, or address to Parliament, one or both. My chief object is, to suggest that the horticulturists of Great Britain, as a body, should in this matter make their petition, that the Glass Palace be retained, and converted into a public winter garden. The management of such a petition could not be in better hands than those of the Editor of *The Gardeners' Chronicle*, and the occasion of the approaching fête would afford many residents in the country, interested in this national undertaking, an opportunity of affixing their signatures. *Thos. Moore, Chelsea. Gard. Chron., July* 12, 1851.

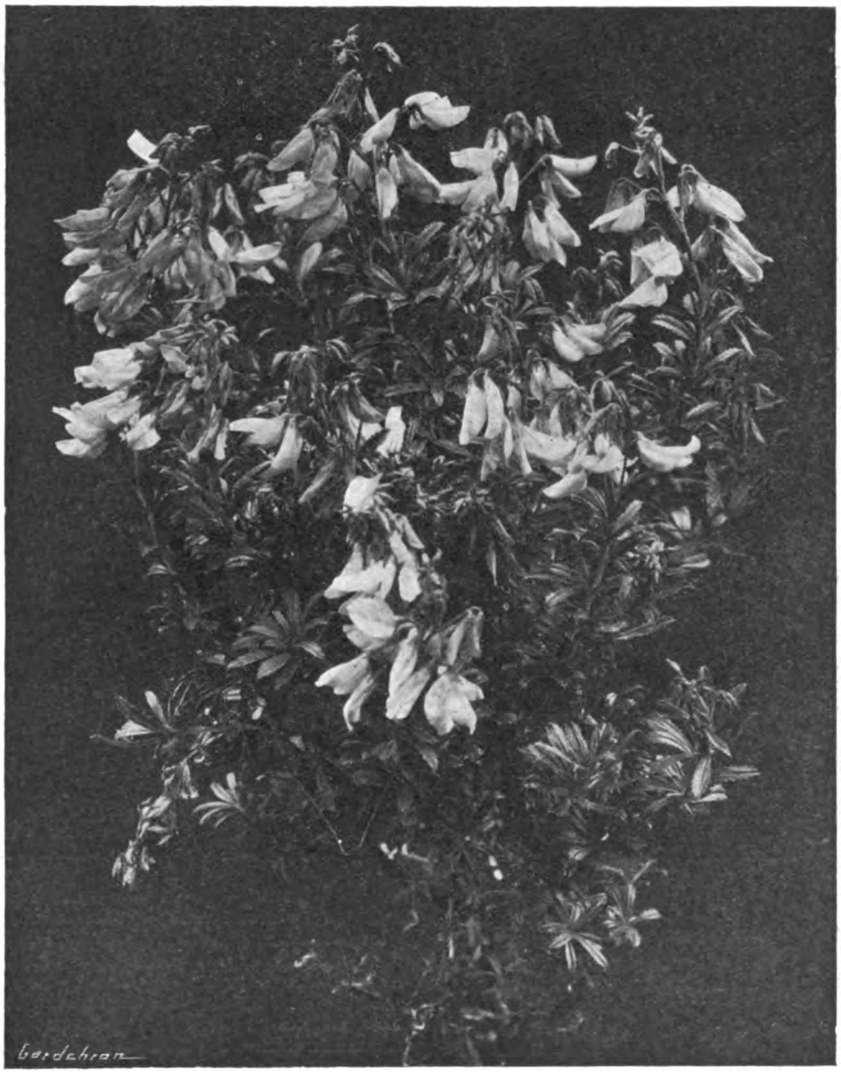

FIG. 12.—ONONIS FRUTICOSA.

R.H.S. Award of Merit, June 29; flowers rose-pink and white. Shown by the Director, Cambridge Botanic Garden (see p. 16).

Publications Received.—*Carnations for Every Garden and Greenhouse*, by Montagu C. Allwood; Country Life, 20, Tavistock Street, W.C.2; Price 12/6 net. *Fruit Pests and Winter Control Measures*, by Herbert W. Miles; obtainable from Messrs. G. Monro, Ltd., Hertford Road, Waltham Cross; price 1/- post free. *Prospectus of Courses in Agriculture, Dairying, Poultry-keeping, Horticulture.* Session 1926-27. *Guide to Experiments on the College Farms*, 1926. Bulletin No. 8. Copies of both of the above may be obtained free of charge on application to The Principal, Sutton Bonington, Loughborough.

The Week's Work.

THE ORCHID HOUSES.

By J. Collier, Gardener to Sir Jeremiah Colman, Bart., Gatton Park, Reigate, Surrey.

Calanthe.—Calanthes of the Veitchii and vestita sections are at their most vigorous stage of growth. Usually, many young roots appear on the surface of the soil at this season, and if a layer of fibrous loam be placed lightly over them they will root quickly into this material. Weak liquid manure made from cow dung may be used at alternate waterings, but not at too great a strength at first. Keep the house warm with sun heat; there will be no danger of scorching if the glass immediately over the plants is lightly stippled; a denser shading is only necessary for a few hours during the hottest part of the day. Arrange the plants so that each growth obtains plenty of light and air by placing them near to the roof-glass.

Catasetums, Cycnoches and Mormodes.—These singular and interesting Orchids should be growing vigorously, and plants that are well rooted need plentiful supplies of water, but any that are not well established must be watered with great care. The flower-spikes usually appear so soon as the pseudo-bulbs become matured. When the plants have passed the flowering stage they should be exposed gradually to full sunshine and supplied with water at the roots up to the time the season's growth is finished. At that stage the leaves will commence to turn yellow and fall. The most suitable place in which to grow these Orchids is the lightest part of a very warm house. Cyrtopodium punctatum and C. Andersonianum require similar treatment.

Oncidium.—After undergoing a short rest such cool-growing Oncidiums, as O. concolor, O. Forbesii and O. Marshallianum will be starting to grow afresh, and so soon as new roots develop from the bases of the young growths, the plants should be repotted. Shallow pans without side holes form the most suitable receptacles. The flowers of these species are produced on pendulous racemes, and for that reason the pans should have wire handles attached for suspending the plants from the roof-rafters. A mixture of Osmunda fibre, half-decayed Oak leaves and Sphagnum-moss forms a suitable compost.

THE KITCHEN GARDEN.

By F. Streeter, Gardener to Lord Leconfield, Petworth Park, Petworth, Sussex.

Cucumbers.—Raise sufficient Cucumber plants of a good cropping variety to furnish fruits in autumn. Sow the seeds singly in small pots and germinate them in a temperature of 70°. Pot them on into six-inch pots so soon as they are well-rooted, and have them in a good condition for planting in their permanent quarters early in August. Keep the plants already cropping free from red spider, if possible, by syringing them at least twice a day, and damp the bare spaces of the house in the evenings with strong liquid manure. Cut the fruits when they are young and keep the shoots tied neatly and stopped as required to ensure the trellis being furnished with healthy shoots. Should red spider make its appearance, I strongly advise replanting another batch as quickly as possible.

Vegetable Marrows.—Keep these plants well supplied with water and give them an occasional dose of liquid manure. Cut the Marrows before they becom too old and hard-skinned, remove weak growths and bad foliage, and stop the strongest shoots. Should mildew have been troublesome during the cold weather in June, other plantings should be made to maintain a succession of Marrows.

Late Peas.—The plants representing the latest sowings are ready for staking and mulching. This crop will have to withstand the autumn gales, therefore extra strong stakes are necessary. Peas have grown very high this season, and it will be found that the sticks provided may prove to be too short; if so, place sufficient tall stakes along each side of the row to keep the stems in an upright position. Spraying the plants at night is very beneficial to them after a hot day. Keep a sharp watch for sparrows, jays and hawfinches, which are very destructive to young Peas.

FRUITS UNDER GLASS.

By T. Pateman, Gardener to Sir Charles Nall-Cain, Brocket Hall, Hertfordshire.

Early Grapes.—The Grapes in the early house will soon be all cut, and when they are cleared sufficiently to allow for copious syringings, this work should be carried out forthwith. If red spider has been troublesome the vines should be syringed rather late in the evening, with an insecticide or a wash made of soft soap and sulphur. Borders that have been kept on the dry side during the time the berries were ripening should be watered copiously, and, to ensure an even distribution of the water, the borders should be lightly pricked up with a fork. If the vines are young and have made vigorous growth, clear water only will suffice, but where the vines are older, and have made weak growths through carrying a heavy crop, the roots may be fed with either liquid manure or a concentrated vine manure. The laterals may be allowed to extend to encourage root-action, but not to such an extent as to cause over-crowding of the young growths, for this would prevent the sun and air reaching and ripening the growths. Free ventilation and the use of the syringe will play an important part in the ripening of next year's bearing wood.

Successional Grapes.—Where the berries are beginning to colour, the borders should be tested carefully for moisture. As a rule, where the vines are vigorous they will need a copious supply of water at this stage, so that sufficient should be given to suffice until the ripening period, when a slightly drier atmosphere should be maintained. A little top ventilation at night is necessary for the production of well-ripened Grapes. Examine the bunches frequently with a view to removing split or decaying berries; should the weather prove hot it is sometimes advisable to shade ripe Grapes, and when this is done, it is wise to use material that a heavy rain will remove, for continuous heavy shading is not to be recommended.

Late Vineries.—The berries in this house are swelling freely, and to obtain the best results the roots should be fed liberally, either with liquid manure or a concentrated vine manure. Ventilate the house freely during hot weather and keep the roots in a moist condition. It is essential that all late keeping Grapes should be well-thinned in order that the berries may have plenty of room to develop. Keep all laterals pinched as required.

HARDY FRUIT GARDEN.

By W. Auton, Gardener to Viscount Elveden, Pyrford Court, Woking, Surrey.

Morello Cherries. — The trees are usually trained in fan-shape, and the fruits are produced on young shoots as well as on spurs on older branches. See that a sufficient number of growths is trained in as straight as possible to furnish all the available space, and pinch the rest to a few buds from the base. Should black-fly make its appearance on the young shoots, spray the trees with a nicotine wash in the late afternoons and syringe them thoroughly with clear water the next morning. Net the trees securely against the depredations of birds.

Thinning Fruits.—All kinds of stone fruits may now receive their final thinning. The number that may profitably be left on any tree depends on the kind of tree, its size and strength and whether it is well established and complete in growth or still being trained. A tree that is in poor health cannot be expected to mature so heavy a crop as a healthy and vigorous one, and it is naturally not wise to allow a young tree which has not filled its allotted space to carry a very heavy crop. Generally speaking, however, nothing helps more to keep fruit trees in good health than regular cropping, hence the keen grower studies the individuality of his trees and allows them to bear crops to their full capacity, while at the same time he guards against overtaxing any tree, as this would operate against the future cropping possibility of it. A healthy and vigorous Peach or Nectarine tree of the larger varieties covering one hundred square feet of space ought to ripen one hundred fully-grown fruits. If more than this is left the fruits will probably lose in size, and although they may ripen equally well, the total value of the crop will be less than when every fruit swells to its fullest capacity.

Raspberries.—The regulating of the growths of Raspberries, as also those of many other fruits of the Bramble type, should receive continued attention, and every growth not wanted for the future furnishing of the space available should be rigorously removed. The crop is approaching maturity, and the new growths should be fastened loosely to the wires so as not to cover the ripening fruits. If the plants are not mulched frequent copious waterings will be necessary to lengthen the season of fruiting, while applications of dilute liquid manure or other suitable fertiliser will help to give size to the berries. The nets from the earliest Strawberry beds may now be utilised to cover the Raspberries to protect them from birds.

Pears.—Pears generally are carrying fairly heavy crops and some thinning will be necessary if large fruits are desired. The number of fruits retained should depend on the age and vigour of the tree, and the known size of the variety, but except for exhibition purposes, moderate-sized fruits are much more useful than very large ones, hence moderate thinning only should be practised, except for special purposes. Cordon trees growing against walls or in warm borders should not be allowed to suffer from dryness at the roots, and occasional applications of diluted liquid manure will greatly help the tree in swelling its fruits. Remove all unnecessary growths to admit the sun and air to the remainder.

THE FLOWER GARDEN.

By F. C. Puddle, Gardener to Lord Aberconway, Bodnant, Taly-Cafn, North Wales.

Layering Rhododendrons. — Propagation by layering is undoubtedly the best method of increasing the stock of choice Rhododendrons, whether species or hybrids, for it has the great advantage over grafting in that the plants are on their own roots, and the trouble of looking them over for suckers is entirely eliminated. Plants which have branches sufficiently low to be brought to the ground level may easily be layered, and the present is perhaps the best time to carry out the operation. If the natural soil is of a peaty nature the layers may be pegged directly into it, but where Rhododendrons are growing in loam, make a shallow bed, composed of leaf-mould and sand, above the surface of the soil, and layer the branches into this. In such cases, moderately large stones will be found preferable to pegs for keeping the layered growths in position, for, in addition, they will serve the purposes of keeping the bed together, conserving the moisture and preventing birds from raking away the leaf soil and exposing the layers. To accomplish this, a free use should be made of stones both around and above the layered stems. The stem should be cut on the underside either in the shape of a tongue, or a piece of the bark may be simply sliced off, provided a fair amount of the cambium layer is exposed. The best position to make the cut is at the junction of last season's growth with that of the previous year, for although larger plants may be obtained by layering further back, the harder wood does not produce roots so readily, and the resultant plants are, as a rule, ill-shaped and unwieldy owing to the length of stem which remains in a horizontal position, for it is only the young growths which assume the perpendicular after layering. The layers should be allowed to remain on the parent plants from two years to three years before separation takes place, for it is essential that they should have an abundance of roots when transplanted, and nothing is gained by taking them off too early. It should be remembered that the growth of the young plant is proceeding without a check during the time that it is allowed to remain in the layered position.

PLANTS UNDER GLASS.

By JOHN COUTTS, Assistant Curator, Royal Botanic Gardens, Kew.

Crossandra undulaefolia.—This beautiful stove evergreen has been in flower for some time its reddish-orange flowers being very attractive. It is easily increased by means of cuttings which root readily in a warm propagating case. This exotic thrives in a compost of good medium loam, with the addition of a little fibrous peat and enough sand to keep the compost open and porous. During its growing season the plant requires a temperature of 55° to 60°, and excellent flowering specimens may be produced the first season in five-inch pots. As this Crossandra is of a shrubby or sub-shrubby habit it may be grown on to make large specimens, which may attain a height of about three feet, well-flowered plants of this size being very beautiful.

Arctotis revoluta and A. aspera.—These are old garden plants, and are easily propagated by means of cuttings. The cutting pots should be stood on the open bench, as the plants are apt to damp if put in a close case. Both the foregoing species flower over a long period; if desired, A. aspera may be grown into large specimens. These Arctotis thrive in any good potting compost and succeed best when fully exposed to sun and air in a cool greenhouse.

Heliotrope.—The Heliotrope is a very useful plant for furnishing the conservatory during late summer and autumn. Plants for this purpose should be potted on as they require it, and those intended to be grown on the plant stages should be grown in six-inch or seven-inch pots, while very large specimens need eight-inch or ten-inch pots. The Heliotrope starves quickly when grown in pots, and to obtain good results, liberal feeding of the roots is essential. The giant varieties, which may be raised from seeds, are excellent for pot work; they have an added interest as they show a considerable range of colour. Heliotrope is excellent for covering pillars, or sunny, back walls in the greenhouse, planting them out for this purpose. Where large spaces are to be covered, a strong-growing variety should be chosen.

Scutellaria costaricana. — This Skull-cap is generally known in gardens as S. Mociniana; it is a beautiful evergreen and generally regarded as a stove plant, although it succeeds perfectly when in flower, in an ordinary greenhouse during the summer. The beautiful scarlet flowers with the inside of the lip golden yellow, are very effective, and the plant blooms over a long period. Cuttings root freely at any time in a warm propagating case; plants raised at this time will make good flowering specimens by next summer. Scutellaria costaricana grows freely in a temperature of 55° to 60° and thrives in any good potting compost. The growths should not be pinched as the best flowers are obtained from strong shoots that develop from the base of the plant. While good specimens may be grown in five-inch pots, this plant is seen at its best when growing strongly and flowering in six-inch pots. It is very subject to attacks of mealy bug and Begonia mite, and both pests must be guarded against during May. Plants raised from cuttings about this date make large specimens for furnishing the beds, while plants propagated during September are suitable for furnishing the benches. This Senecio grows freely in a cool greenhouse, and needs to be pinched on frequent occasions to ensure bushy specimens.

Scutellaria coccinea, S. violacea and S. Ventenatii.—These are all beautiful free-flowering plants, suitable for the greenhouse during the summer. Plants raised from cuttings inserted during July make good specimens for flowering the following year. They grow freely in a warm greenhouse, and thrive in any good potting compost. The leading shoots should be pinched on several occasions to promote a bushy habit. The Scutellarias are somewhat subject to attacks of white fly which must be guarded against.

Senecio glastifolius.—This plant wrongly known in cultivation as S. multibracteatus, is a very useful greenhouse subject for flowering

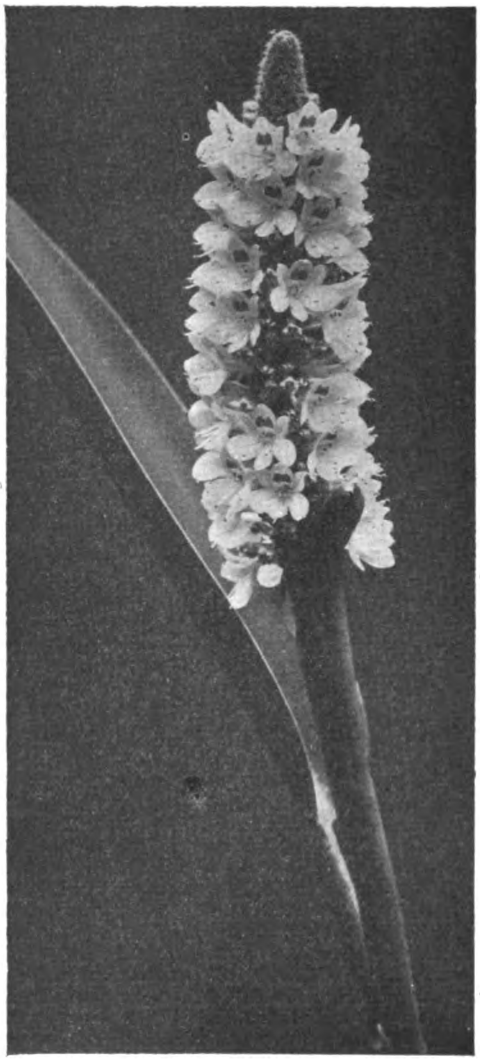

FIG. 13.—PONTEDERIA CORDATA VAR. LANCEOLATA.

R.H.S. Award of Merit, June 29. Flowers lavender-blue. Shown by Mr. Amos Perry (see p. 16.)

Senecio speciosus.—This Senecio is a native of South Africa and is a very showy greenhouse plant. Although introduced in 1789, it is probably not in cultivation in this country except in botanic gardens. It produces its flower scapes in succession throughout the whole the summer; in fact, the plant flowers so freely that it is somewhat difficult to obtain cuttings for propagation. For this reason a plant should be prevented from flowering, and induced to produce shoots from the creeping rhizome or root-stock for the special purpose of propagation.

FOR NORTHERN GARDENERS.

By A. T. HARRISON, Gardener to the MARQUIS OF AILSA, Culzean Castle, Maybole, Ayrshire.

Hydrangeas.—The many beautiful varieties of Hydrangea hortensis sent out in recent years has once more focussed attention on these useful plants, and where increase of stock is desirable, the present is a most suitable time for inserting the cuttings. These should be made of young growths with two or three joints, inserted singly in small pots, and placed in a fairly warm house, where they should be shaded and watered as required. So soon as they are rooted they may be hardened off gradually and grown in in cool conditions during the autumn and winter in order to ripen the wood. Keep the young plants growing in as small pots as possible until the flower buds show in early spring, when they should be shifted into larger pots and given a generous compost. Cuttings rooted now and grown on are capable of producing either one very large head of flowers, or some may produce two or three smaller ones during next summer.

Increasing Alpines. — Now that most of the early-flowering alpines are over for the season and where increase of any of these is necessary, a frame should be prepared, preferably with a north aspect, and a mixture of old potting soil, leaf-mould and sand placed to a depth of several inches therein. Cuttings of many varieties are now procurable. Where any of the stronger growers are encroaching on their neighbours, they may be reduced to their required sizes, and pieces of growth inserted in the frame, shading them from hot sun and keeping the sashes closed for two or three weeks. Cuttings or pipings of Pinks and other members of the Dianthus family inserted now make useful plants for transferring to open quarters in autumn, and among others the many fine forms of Aubrietia, Saxifraga, Phlox, Alyssum, etc., if propagated in this way will provide a splendid stock of young plants for replacing worn out specimens, or for any extension of the flower garden which may be under contemplation.

Primula sinensis.—Seedlings of the greenhouse Primula are ready for pricking off into small pots. A fairly sandy compost should be prepared for them. Where numbers of varieties of these Primulas are grown some means of identifying the different sorts is necessary, and labelling each pot entails a lot of tallies and time, and I find it better in their initial stages to place the small pots closely together in trays or seed boxes of one variety only, thus ensuring that each variety is easily identified by one label. When repotting later the plants may be dealt with more easily, as by that time their foliage has assumed distinguishing colourings and identification will be easy. Keep the young plants shaded from the mid-day sun, but do not coddle them, as they are apt to damp off if kept too close and grown in a moist atmosphere.

Broccoli.—The planting of this valuable vegetable for winter and spring supplies should now be proceeded with, beginning with the earlier-maturing varieties. So soon as more ground becomes available by the clearing of the first crops, such as Spinach, Shallots, Potatos and Cabbages, it may be profitably employed by digging it over in order to clean it, and after treading it firmly, planting it with the later varieties of Broccoli. Some growers do not advocate digging the ground for this crop, but simply hoe the surface and rake off the refuse, planting the Broccoli, if the land is very hard, in holes made with a crow-bar, the object being to ensure short, sturdy growth from the start, which enables the plants to withstand the severities of the winter. In our milder climate we do not apprehend many losses during the winter, and find that Broccoli plants grow away much more freely if the ground is turned over, just before planting time, and the surface soil stirred frequently with the hoe during summer and autumn.

NOTES FROM A WELSH GARDEN.

One of the most striking of the spring-flowering shrubs this season has been Ceanothus dentatus (papillosus) var. floribundus, a form which appears to be exceedingly rare in our gardens. This shrub I take to be the true C. floribundus of Hooker, which was figured in the *Botanical Magazine* (t. 4,806), of September, 1854, and described by Mr. W. J. Bean in *Trees and Shrubs Hardy in the British Isles* (vol. 1, p. 318), as having "dense globular corymbs of mazarine-blue flowers." These blooms, with which the shrub has been so heavily laden, are certainly a more brilliant blue than those of any other evergreen Ceanothus which I have seen either here or in California, and the very small dark, glossy-green leaves with decurved margins are most distinct.

Near to the above, Buddleia alternifolia is bearing an abundance of blooms, Genista fragrans is still a mass of yellow and a ten-foot specimen of Abutilon vitifolium with pale lavender flowers is indicating by the unusual number of its blossoms and the comparative poverty of its foliage, that this short-lived subject is about to make way for a younger plant. The splendid Rosa Moyesii and its pink-flowered congener, R. Fargesii, are in first-rate form, whilst the pretty R. alpina, with its emerald foliage and crimson, golden-centred flowers, is hardly less attractive in its own way. R. sinica is bearing a fair number of its enormous white blossoms, and the old, double, yellow Banksian Rose has this season made more commendable efforts than is usual for it. Among the older, semi-double hybrid Roses there are two which never fail to arouse the warmest admiration here, one being the flesh-pink Cupid, and the other the well-known Una.

The earliest of the summer Heaths to bloom was the blood-crimson Erica cinerea var. coccinea, a very dwarf form with dark green, bronzy foliage, and flowers of a remarkably rich colour. Bruckenthalia spiculifolia, with spikes of pale pink flowers, is another delightful Ericaceous plant of very dwarf, compact habit. Both of these were in bloom before the end of May, and another gay patch of colour on the Heath slope was afforded by a good form of Rhododendron ferrugineum which, by the way, has never done so well until crowded up by Heathers. Under similar conditions, R. Wilsonii is also particularly happy, and carrying quantities of pale pink blossoms. R. azaleoides is another dwarf member of the genus with some meritorious attractions of its own. Indeed, it is a shrub that might be more often seen in gardens, for it does not flower until nearly midsummer, when its large, pink and white trusses are yielded in great abundance and they are deliciously fragrant.

Notable for their wealth of blossom this year are Leptospermum scoparium, and the ruby-crimson variety Nichollii. The former, about eight feet high and quite in the open, was unharmed by 20° of frost last winter. Fremontia californica is ablaze with its splendid golden goblets which are yielded in such bountiful profusion every year, and this fine subject, with a companion bush of Solanum crispum autumnalis adorned with quantities of dark, lavender-blue and orange flowers makes a singularly arresting combination.

Among Cistuses there is a new-comer in the form of C. wintonensis. Though as yet only a foot high, the little bush has borne a number of blossoms, and these, about an inch across, are pure white, each petal having a wine-crimson blotch and a yellow stain at the base. The leaves are grey and downy, as in C. albidus, so that C. wintonensis can, I think, claim to be the only grey-leaved member of the genus with white, crimson-blotched flowers. Another very distinct feature possessed by this delightful shrub is the vinous tip of the opening bud, that colour being retained in a thin line at the terminal margin of each expanded petal. C. wintonensis was given an Award of Merit at a recent show in Vincent Square. Messrs. Hillier of Winchester, who are the raisers of this novelty, tell me that they believe it to be a hybrid between a Cistus and a Helianthemum.

C. recognitus, of most lists, is a remarkably beautiful variety. It is apparently allied to C. Loretii, but it is of taller, more slender habit, the flowers are larger and flatter, the white petals broadly overlapping, and the yellow eye merges into slight rays, rather than a heavy blotch, of pale crimson. C. populifolius is a Rock Rose of four feet to six feet that is not often seen, but it is one of the hardiest and distinct in the large size of its heart-shaped, bright green leaves. The crinkly, white flowers have a slight yellow stain at the centre; they are two inches across and borne in clusters.

On the top of a dry retaining wall, Genista (Cytisus) glabrescens strikes a distinctive note with its curiously angular, slender branches and masses of yellow bloom which are in evidence throughout May and June. Helianthemum lunulatum in a similar position is an even more comely little shrublet. In the self-coloured yellow-flowered Rock-Roses, hybrids excepted, it would not be easy to say which is the best of that excellent trio, H. libanotis, H. formosum unicolor or H. alyssoides, but perhaps the last excels in prolificacy and length of blossoming period.

Space being limited, Spiraea discolor was removed to the woodland some time ago, its place being taken by S. Henryi. The former is undoubtedly among the best of its kind, but it is somewhat disappointing in that its flower plumes last such a short time at their best and a long time at their worst, that is, when they assume their rusty hue. A. Henryi is, I think, a much superior species—if one may make comparisons between two very different shrubs—its bold corymbs of ivory-white being remarkably showy for a long season about midsummer. For the rougher parts of the rock garden, or among rocks at the margin of water, S. decumbens is a decided acquisition at this time of year, the six-inch, slender growths terminating in corymbs of white flowers. This is one of the dwarfest of the Spiraeas and grows wild in the Tyrol. S. Hacquetii, differing only from this in some minor botanical features, chiefly in the young bark, leaves, flower-stalk and calyx being downy, is equally useful.

The old Peruvian Squill (Scilla peruviana) is a plant one does not often see these days. Its enormous heads of blue-purple flowers, which stand just clear of the eight-inch, glossy-green, spear-shaped leaves, are very effective in a mixed border. Among other noteworthy bulbous plants of the season is Ornithogalum arabicum, with very large, waxen-white flowers, accentuated by yellow anthers and a jet black ovary. Ixiolirion tataricum, bearing elegant umbels of lavender-blue flowers strikes a telling note among the Ixias of a dry border and, following some Camassias in deeper and cooler soil, are the lovely pale blue Brodiaea Bridgesii and B. lactea.

Although Phormium tenax has thrust up flowering spikes a dozen feet in height, the much dwarfer P. Hookeri, with leaves of only about four feet is generally a more prolific bloomer. This is one of the most useful foliage plants of ts kind for gardens where space must be considered, and the numerous flowers in bronzy vermilion and orange, borne on stately stems of a plum-blue are by no means ineffective.

Paeonia lutea is very beautiful in a mixed border, a plant well worth growing for its foliage alone. But when the glaucous leafage is adorned by the rather small, nodding, golden flowers, the effect is irrestibly charming. Another first-rate plant in the same colour, but of a brighter tone, is Trollius pumilis yunnanensis. This Globe Flower is generally later than most others and there is much quality and distinction about the flat, wide-open blossoms which terminate its erect nine-inch stems and broad-lobed leaves. Both this and the dwarfer type species are easy and content by the water-side in part shade or full sun. *A. T. Johnson, Ro Wen, N. Wales.*

VIOLA SPECIES IN CATALOGUES AND LISTS.

(*Concluded from page* 12).

In *The English Rock Garden*, Farrer gave five forms of V. lutea:—V. Bubanii, V. calaminaria, V. elegans, V. gracillima and V. sudetica. The above account takes one some way towards an understanding of the relationship between these, and it will be observed that V. elegans and V. sudetica are regarded as sub-species. Farrer wrote that V. sudetica may be seen "principally in the Vosges." I imagine this was a slip, as it is V. elegans that is common in the Vosges, and this was given specific rank as V. elegans by Kirschleger whose book, *Flore d'Alsace*, 1852, is still authoritative for that region. Farrer gives V. elegans as coming from Switzerland, which it does; but it covers a much wider area than that. V. gracillima is treated by Becker as a mere synonym. V calaminaria is a name given to V. lutea from the Rhine Province and Belgium as a whole; it differs from V. elegans only by its luxuriant growth—it is said that a root may carry from fifty to seventy blossoms. There is a large plant of it in a border at Kew, but with smallish flowers. V. Bubanii is now given specific rank, but is not widely separated from V. lutea; it has more deeply divided stipules with more numerous segments, a longer spur (four or five times the length of the appendices), largish flowers (up to one-and-a-quarter inch broad), and is violet, like the French form of V. lutea.

A further circle of confusion rotates round V. rupestris, V. arenaria and V. silvestris. The majority of catalogues offer a Viola under the name of V. arenaria rosea—which at this day is inexcusable, both because the plant supplied is invariably V. silvestris rosea, and because the *Kew Handlist*, 1925, adopts arenaria's correct name of V. rupestris. Mr. Lofthouse tells me that in Teesdale small plants of V. silvestris are sometimes collected as V. rupestris. Schmidt's name of V. rupestris dates back to 1791, and thus takes precedence of De Candolle's V. arenaria (1805). It is widely spread over Europe, but I doubt if it has been found in England. It extends also into Russia, Siberia and the Himalayas. V. silvestris on the other hand, is native to England, is even more widely spread in Europe, but does not reach quite so far into Asia. The two species may be most easily distinguished by their stipules, which in V. rupestris are oblong with slight serration, whereas in V. silvestris they are membranous and pectinately fimbriated. The leaves of V. rupestris are often roundish and obtuse, while those of V. silvestris are almost acuminate. For gardening purposes V. rupestris is the more important. It has rounded, pale violet flowers. One catalogue filled me with hope by offering V. rupestris, but when the plant arrived it turned out to be, certainly something of supreme beauty, with a very large flower of bright blue, but something of the Calcarata persuasion, and as near V. altaica as anything I have yet thought of, except that I cannot convince myself that any nurseryman would supply me with V. altaica for ninepence! I have bought V. lactea under the name of V. declinata and V. rothomagensis under the name of V. heterophylla (Dubyana), but I did not expect to be given an uncommon treasure such as V. rupestris.

A certain amount of confusion appears to exist with regard to V. Munbyana, but here my remarks must be taken as subject to further observation. Farrer dismisses V. Munbyana with a rather contemptuous, short reference, and I suggest that the plant deserves better treatment than that. He also states that it hails from Greece. Kew, on the contrary, give it as from Spain. Now V. Munbyana was first given by Desfontaine in his *Flora of the Atlas Range* as V. cornuta, in 1800. In 1847 it was given as V. calcarata by Munby in his *Flora of Algeria*. In 1852 Boissier and Reuter gave it specific rank as V. Munbyana. Becker states that the "locus classicus" of the species is Mt. Atlas, near Ain Talazid. It is distributed, however, throughout north Algeria, in the Algier Province. The fact that it is native to Algeria does not preclude the possibility that it may have been found in southern Spain, but so far as I am aware, there is no record of the fact, and I think my idea that it is native to Greece must be erroneous.

A much more important fact is that there are two species masquerading under the name of V. Munbyana—certainly close kindred, but so different as to be horticulturally distinct. In 1896 Reverchon collected in the Province Constantine in Algeria, on Mt. Babor, a Viola which presented certain differences, and which Becker named V. Battandieri, after Professor Jules Battandier, and in commemoration of his work on the Algerian Flora. This species or sub-species is a more luxuriant plant than typical V. Munbyana, rising to sixteen inches in height, with the leaf larger and equal to the petiole instead of the petiole being longer than the leaf; with larger and more divided stipules; with the segments of the stipules oblong rather than linear, and inserted deeply at the base rather than pinnatifid; the terminal segment foliaceous and crenate rather than lanceolate and sparsely toothed. The spur of V. Munbyana is erect, attenuated at the tip, about as long again as the appendices; that of V. Battandieri is equal in length to the lower petal, slender and acute in nature but tending to be shorter, thicker and curved in cultivation. The blossom of V. Battandieri is much larger—in one I measured the corolla was one-and-a-quarter-inch to one-and-a-half-inch in diameter, and rather more than one-and-a-half-inch long. The colour is a beautiful violet, not dark, with white and yellow eye, and very dark, luminous, violet radiations. There are transitions between V. Munbyana and V. Battandieri, and so far as I could make out from a rather cursory examination, it may be a transitional form that Kew has in the herbaceous garden. At any rate, the form I saw there was not so fine as that which I take to be V. Battandieri.

Errata.—On p. 12, first column, line 16, of the issue of July 3, 1926, the word "two" has inadvertently been printed instead of "five." There are five distinct species of Violas there named. *E. Enever Todd, Lt.-Col.*

THE FERNERY.

HARDY FERNS FOR SHADY SITUATIONS.

NATIVE Ferns are valuable subjects for furnishing parts of the gardens which are partially or perpetually shaded. The planting of such places with flowering and ornamental foliage plants other than Ferns ends in absolute failure. Hardy Ferns are suited to the shaded conditions which prove so disastrous to the other plants, and make healthy, vigorous and luxuriant growth.

The cultivation of hardy Ferns is very simple, their general requirements being shade, shelter, and abundance of water during their growing season. Those whose gardens are situated in densely populated neighbourhoods or towns cannot do better than have the ground thoroughly turned over, and if the staple soil be heavy in texture, to incorporate a fair proportion of broken peat, decayed leaves and coarse sand with it. After the Ferns are planted, the soil should be kept fairly moist, especially during their growing season, and be watered frequently during dry weather.

There is a wealth of beautiful Ferns to select from and to suit all positions, including Polystichums, of which there are numbers of exceedingly handsome varieties; Nephrodium (Lastrea) Felix-mas (or Buckler Fern), which continue in perfection quite late in the season; Lastrea pseudo-mas, which has strong, leathery foliage and is to be highly recommended, being of robust habit and remaining decorative well into the winter. The forms of Lastrea dilatata (the Broad Buckler Fern) are also most effective, many having pretty, tasselled and crested foliage.

Where moisture and shade can be maintained, Osmunda regalis, the Royal Fern, and its varieties are delightful and truly noble plants, often attaining a height from five to ten feet, and as many feet in circumference when established.

The Hart's Tongue Fern, Scolopendrium vulgare, has all the qualities desired in a hardy Fern; it is certainly the most useful, also the most imposing and attractive, and undoubtedly the most varied and interesting of all. The variations in the fronds are endless; some appear as veritable balls of green, others have foliage so crisped as to resemble Parsley. S. vulgare crispum varieties are the most beautiful of all, having broad, long fronds, deeply frilled and crested. All these Ferns are evergreen, perfectly hardy, and of bold, striking appearance and ornamental, well adapted for planting under trees or on the shady side of rockeries.

Other suitable Ferns for shady places are the Blechnums; Cystopteris (The Bladder Fern), and Polypodium vulgare varieties, which are evergreen. *W. Logan.*

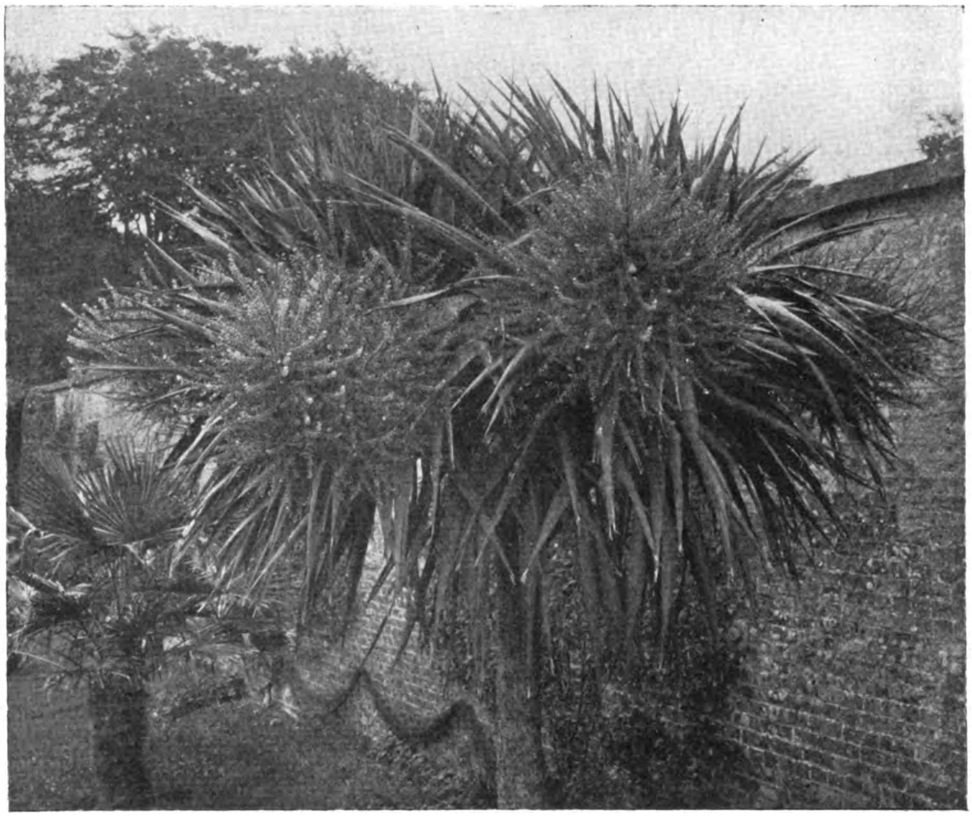

FIG. 14.—CORDYLINE AUSTRALIS FLOWERING IN THE GARDENS AT CULZEAN CASTLE, AYRSHIRE.

(see p. 29).

HARDY FLOWER BORDER.

LATHYRUS PUBESCENS.

THOUGH sometimes described as a greenhouse climber this perennial Pea, a native of South America, has proved absolutely hardy here even after such a trial as last winter provided, with 20° of frost in autumn and unusually low temperature after growth had commenced in March. Being an evergreen climber this is the more remarkable, the leafage being quite unharmed by frost which cut back subjects generally considered perfectly hardy. L. pubescens we have growing in a mixed border, a light support being given it in the form of a few twiggy sticks and its four-foot growths ramble elegantly among neighbouring shrubs. The flowers which appear in June are borne in ample clusters about four inches long, the stalks being strong and covered with fine hairs. Individually the blossoms are nearly one inch across; they are slightly fragrant and range in colour from blue to purple. Propagation is easily carried out by seeds which germinate freely in the open ground in summer. *J., N. Wales.*

ACHILLEA FORMOSA.

THE solitary flowers of this showy border plant are borne on stems some fifteen inches high. They are white, two inches in diameter, with a double row of petals. The needle-like, saw-edged leaves one-and-a-half inch long, are felted with a grey tomentum.

Apart from its merits as a decorative subject this Achillea is a useful "contrast" plant. *F. J.*

LYCHNIS VISCARIA.

ONCE a very common plant, Lychnis Viscaria is not so often seen these days, which is odd, for it is as good a subject for the rock garden as for the border. During the past five years there seems to have been a fresh interest taken in that rather wonderful double form usually listed as L. V. splendens fl. pl. If the bold flower heads of this robust plant are somewhat garish in the tone of their vivid crimson, there is much to be said on their behalf. Few perennials will give such a striking blaze of colour as a group of this double Lychnis and its rather keen tint is one that goes very well with good clear blues such as that of Linum narbonense. The plants, moreover, remain in bloom for such a long period that they may be used for bedding or edging with most satisfactory results. L. V. splendens, from which this double form was originated, seems to be difficult to come by nowadays and I am beginning to think it must be extinct.

A remarkably pretty form of L. Viscaria, acquired a few years ago, always attracts a good deal of attention in the rock garden. This is a good deal smaller than the type, being no more than six inches to eight inches in height when flowering. Another distinctive feature is the absence of any red in the calyx, and that colour, always more or less present in all parts of the typical species and the double variety, alluded to, is entirely absent from the foliage. The latter, as well as the flower stalks, and calyces, are a pale, fresh green, and the flowers, instead of being a reddish-purple are a bright rose-pink. *N.*

POTENTILLA ATROSANGUINEA.

This is the specific name of the most intensely brilliant flower one may plant in the herbaceous border, with the knowledge that it will flower incessantly from quite the early dawn of summer until the mellowing tints of vines and Maples proclaim the arrival of autumn, and even then, if sunshine and shower cajole the plants, they will yet linger in bloom, brightest among the reds that mingle with the autumn golden yellows.

The variety Gibson's Scarlet is held by some to be merely synonymus with P. atrosanguinea, whilst it is otherwise described as a selected, improved form. I am not disposed to argue the point being content to state that at any rate Mr. George Gibson was smart enough to see in this Potentilla a plant which required only to be pushed into the forefront and individualised to bring it into widespread favour, and there can be no gainsaying the fact, that as Gibson's Scarlet it has been sold and planted with vastly greater freedom than it was ever likely to have done under the botanical name,distinctly appropriate as that name happens to be.

My particular purpose in writing of the plant is to state one or two facts which explain why it is not invariably the success that might reasonably be expected when once seen thriving with the vigour of some common weed.

The plant is not extravagant in its demands, but if the small consideration it asks be denied it will pine and languish. Its roots need a cool, fairly strong soil while its foliage and flowers should enjoy strong sunlight. By a strong soil is not meant excessively rich, humus-laden ground but a loam which, whilst being fibrous, tends toward clay rather than sand. Such a soil as will suit Roses will fulfill the needs of this and other Potentillas admirably, if it be deeply-dug and, where necessary, drained by the use of rough brick rubble. The Potentillas may then be planted somewhat thinly and the coolness required may be secured by carpeting the ground with a close-growing plant with either white or bright blue flowers. Alyssum maritimum (from seeds broadcasted) will provide the white-flowered carpet, and where blue is preferred Veronica Teucrium dubia is just the thing.

Early spring planting is to be recommended rather than autumn and it is advisable to split up the plants to almost single crowns rather than plant strong clumps. A few soakings with water will ensure the plants starting, and later the ground carpet will minimise the necessity for watering. I have found, however, that syringing the foliage after hot days keeps the leaves healthy. So good a plant thoroughly deserves this much care. *A. J. M.*

WILD GARDEN.

CRAMBE CORDIFOLIA.

A little too rampant for the herbaceous border, unless it be one of extra large proportions, this giant Seakale is a magnificent plant for the wild garden, for the waterside or for bold groupings on the lawn.

The very large, smooth, heart-shaped leaves are surmounted by the long, many-branched spikes of small white flowers, which are persistent over quite a long period.

Not boasting the exquisite beauty of many flowering plants, Crambe cordifolia, like the Gunneras, the Heracleums and other giants, impresses by its size and its splendidly-proportioned habit, and it is one of those plants which, when properly used, may be made to form a notable and appropriate feature of the summer garden.

The propagation of this plant is effected by division of the roots, or by seeds sown in February or March; it was introduced from the Caucasus in 1822. *Ralph E. Arnold.*

INDOOR PLANTS.

BOMAREAS.

The genus Bomarea comprises about seventy-five species of beautiful, twining plants, nearly all of which inhabit the temperate regions of the Andes of Colombia, Ecuador and Peru, where they are found growing at elevations from 6,000 feet to 10,000 feet.

Closely related to the Alstroemerias, their flowers are so much alike in form and colour that they are not easily distinguished from each other. The chief difference, however, is the twining habit of the Bomareas, the stems in some of the species growing to a length of twenty feet or more.

Bomareas are valuable plants for training to a pillar or on the wall of a conservatory. They do not thrive under pot culture, but when planted out in a well-drained border in a light, rich compost, they develop their full beauty. During their season of growth a liberal supply of water is needed at the roots and an occasional application of liquid manure will prove beneficial. A winter temperature of 45° to 50° should be maintained if they are to succeed.

Bomareas produce shoots from the base each year; these grow rapidly, terminating in pendulous, umbellate cymes of flowers.

Propagation may be effected by division of the roots or by seeds. The most suitable time to divide the roots is early spring, immediately the young shoots appear above the soil. Seeds should be sown so soon as ripe in a mixture of sandy peat, and if placed in an intermediate temperature, germination will take place in two or three weeks from the date of sowing.

Although the genus is a fairly large one, it is doubtful whether more than a dozen species are in cultivation. The few hybrids which have been raised are all good garden plants. Bomarea Matthewsii and B. Whittonii each received an Award of Merit at the meeting of the Royal Horticultural Society last October. B. Matthewsii was the result of crossing B. Carderi with B. edulis, whilst B. Whittonii is the reverse cross. Another good hybrid is B. Banksii, which resulted from crossing B. caldasiana with B. patacocensis.

The following are some of the best known species:—

B. CALDASIANA.—Introduced in 1863 from Colombia, this species has large, drooping umbels of bright orange-yellow flowers, thickly spotted with reddish-brown. It is figured in *Bot. Mag.*, t. 5,442.

B. CARDERI.—This is the largest and one of the most beautiful species in cultivation. The large, loose, drooping umbels are often two feet or more across, and the bell-shaped flowers are three inches long by two inches in breadth, of a rosy-pink and green colour and spotted with crimson. A native of the Andes of Colombia.

B. EDULIS.—This is perhaps the most common species in cultivation. The plant produces numerous shoots from the base each year. The segments of the flowers are rose-coloured, tipped with green and spotted. It is said that the tubers are sometimes used as food in St. Domingo.

B. FRONDEA.—This species produces dense umbels, six inches or more in diameter. The flowers are bright yellow, spotted with red. It inhabits the woods of the western slopes of the Andes of Colombia from 7,000 feet to 10,000 feet.

B. MULTIFLORA.—A native of Venezuela, this species produces from twenty to forty flowers in a dense umbel. The colour is orange-red, spotted with crimson.

B. PATACOCENSIS.—Sometimes known under the name of B. conferta, this species is one of the most robust and beautiful in cultivation. When well grown the stems attain a length of twenty feet or more, at the extremity of which is borne a large, dense umbel containing from twenty to thirty bell-shaped flowers, of a rich crimson colour. It is a native of the temperate regions of the Andes, where it occurs at an elevation of from 6,000 feet to 8,000 feet. This species thrives remarkably well in the conservatory at Kew, where it may be seen at the present time in flower.

B. SALSILLA (SYN. B. OCULATA).—A native of Chile, this species has proved quite hardy under various conditions. The plant produces numerous stems from two feet to three feet high, and is therefore one of the smallest of the genus. The campanulate flowers are of a light purplish shade, the inner segments having a darker spot at the base. *T. W. T.*

CRASSULAS.

This is a well-known and popular genus of succulent plants giving its name to the order of which it is the type. There are many very handsome species in the family, the majority of them being natives of the Cape of Good Hope, that land so rich in succulents and various other grotesque and peculiar members of the vegetable kingdom. Some few species are found, however, in the Mediterranean district.

The leaves are fleshy, and the flowers are disposed in large cymes upon the tops of the branches. Usually these are somewhat lax, but in some species they are very large and handsome, as may be instanced in the species and varieties of Kalosanthes which, for purposes of cultivation, may be conveniently included under Crassula.

These plants thrive well in a mixture of loam, sand, and broken brick rubbish. The pots should be well-drained and very little water should be given the plants during the winter. They may be readily increased from cuttings which should be dried slightly before inserting them in the soil. *A. P. C.*

ORCHID NOTES AND GLEANINGS.

LAELIO-CATTLEYA LUSTRE AND ITS VARIETIES AND HYBRIDS.

This beautiful hybrid was raised at Westonbirt so far back as 1907, from Laelio-Cattleya callistoglossa crossed with Cattleya Lueddemanniana; and as the first-named parent is derived from Cattleya Warsewiczii and Laelia purpurata, no better combination could be imagined.

Brightly coloured Laelio-Cattleyas, and Cattleyas of large size which produce their flowers during the autumn and winter, are in great demand, both for the home and export trade.

The forms of this hybrid show much diversity in their general characters in size, shape and colouring, and many might have passed as distinct hybrids without evidence of their origin; another example of the great diversity obtained from a particular batch of Orchid seedlings. Several of the varieties have received awards; one was given a first-class certificate and another an Award of Merit at the International Horticultural Exhibition of 1912. Beautiful as L.-C. Lustre is in itself, it is eclipsed by some of its progeny, of which some dozen or more have already flowered: the major portion having also been raised at Westonbirt, showing the advantages of continued effort and the results of using the best seedlings as parents again.

L.-C. Lustre is a particularly good parent, not perhaps from the number of seedlings raised from it either as a pollen- or seed-bearing plant, but from the effect it has of imparting its colour to its offspring.

Perhaps the best-known hybrid from L.-C. Lustre is L.-C. Soulange, which first flowered in 1915, and is the result of a cross with C. Dowiana aurea. Laelio-Cattleya Sargon is another hybrid raised from C. Hardyana. crossed with L.-C. Lustre, which also appeared in 1915. L.-C. lustrissima is a cross from L.-C. Lustre with C. Warscewiczii, which first flowered in the collection of Mons. Lambeau in 1918. L.-C. Mrs. T. Ward, derived from L.-C. Hiawatha and L.-C. Lustre, both parents being of hybrid origin, first flowered in the Blenheim collection in 1920.

Another hybrid which also first flowered with Messrs. McBean, in 1920, was raised from L.-C. Lustre crossed with L.-C. Dominiana. L.-C. J. Ansaldo, the result of crossing L.-C. Hildegard with the hybrid under consideration first appeared in 1819. L.-C. Orpheus is the result of a cross with C. Schilleriana, which first appeared at Westonbirt in 1915.

L.-C. Jacquinetta is derived from C. Empress Frederick crossed with L.-C. Lustre, and was raised by Messrs. Black and Flory in 1920. The three following hybrids appeared in the Westonbirt collection in 1922, namely: L.-C. Morvyth (L.-C. Lustre × L.-C. St. Gothard), L.-C. Mrs. Chamberlain Chauler (L.-C. Lustre × L. purpurata), and the wonderful L.-C. Queen Mary, which is the result of crossing C. Peetersii with L.-C. Lustre.

Most Laelio-Cattleyas have been crossed with some member of the large Brasso-Cattleya family, and L.-C. Lustre is no exception, having been crossed with B.-C. Mrs. J. Leeman, the result being B.-L.-C. President Wilson, which first flowered with Messrs. Stuart Low and Co., in 1917. The hybrids in which L.-C. Lustre is a parent comprise a race of autumn-flowering Laelio-Cattleyas which for size, shape and beautiful colouring are unsurpassed, and fully illustrate the great progress which has been made in this most lovely class of plants during recent years. *J. T. B.*

FLORISTS' FLOWERS.

FUCHSIAS.

THAT the Fuchsia is not so widely grown to-day as was the case two or three decades ago is a matter for regret, for not only is it a highly decorative plant of easy cultivation, but it is also a very accommodating plant for town gardens, and makes an ideal plant for the amateur.

Fine specimens, several feet high and as much through, may be grown in a single season and the training of them to meet any particular need is a very easy matter. A naturally grown pyramid is a joy to behold in its perfect outline, the lower branches nearly or quite hiding the pot, the whole plant dense in growth and laden with flowers. Old horticultural schedules used to offer prizes for such plants from spring-struck cuttings, and marvellous specimens were produced.

To produce these specimens the cuttings should be rooted as early as they are available in the spring, and the plants grown on without a check until June, when they should be ready for their positions outside.

To ensure short-jointed wood, which is the foundation of a floriferous plant, they should be kept as near the roof-glass as practicable, with plenty of light at all stages of their growth, and there is no better method than that of growing them on a mild hot-bed where the lights may be gradually raised as the plants increase in height. Ample room must also be given for lateral development, or the symmetry of the plant will suffer.

Grown under such conditions it is easy to give the plants the warm, moist conditions which they need, and at the same time an abundance of air at every favourable opportunity, when they will throw out strong shoots at every joint and form the foundation of fine specimens. The plants should never be allowed to become pot bound but should be shifted on into other pots of larger size so soon as they need it, using a light, rich compost. By May the plants will be ready for their final potting and for this a rather more loamy compost should be employed.

The Fuchsia is a gross feeder, and so soon as the pots are full of roots regular feeding of the plants should be practised. If liquid manure is available nothing is better than this stimulant used in a diluted form. If this is not available, applications of guano or Clay's fertiliser may be given instead. Thus treated, they will flower well and remain attractive during the whole of the late summer and autumn.

Fuchsias may be regarded as general utility subjects, as the purposes for which they may be employed are many, both indoors and out. They are ideal subjects for furnishing large vases or tubs to stand on verandahs and terraces, and few other plants produce such large, well-furnished specimens, which remain in beauty such a length of time.

Trained as standards they are useful in large bedding schemes as overhead plants, while the more compact varieties are very effective in any bedding scheme.

A few good varieties are Mrs. Marshall, tube and sepals rosy-scarlet, with a white corolla; Mrs. Rundle, tube and sepals pale flesh-colour, corolla salmon-red; Charming, tube and sepals red, corolla purple; Elegance, tube and sepals rose, corolla purple; The Shah, tube and sepals bright red, corolla violet blue; and Olympia, tube and sepals salmon-pink, corolla carmine-scarlet. *A. P. C.*

TREES AND SHRUBS.

CORDYLINES FLOWERING IN SCOTLAND.

THE present season has been marked by exceeding floriferousness of the part of these natives of Australia, now established for upwards of twenty-five years in this part of the country, and visitors from all parts are greatly interested in the very large panicles of flowers the Cordylines produce (Fig. 14). The plants growing here are of two distinct kinds, one producing panicles of pale cream-coloured flowers, while in the other the flowers are a dull pink or purplish shade, but both are alike in the massiveness and freedom of flowering displayed this season; one of these many-headed forms have so many as twenty enormous flower-spikes, which remind one of a very much exaggerated spike of Astilbe japonica, measuring two feet or so across its base, and about three feet long.

One specimen, which has run up tall and straight, probably because it has not hitherto produced a flower-spike, is now nearing thirty feet in height and has at last produced flowers, but the most effective plants are those which have divided and subdivided stems by reason of flowering in previous years, until they carry quite a heavy crop of blossoms. The latter are sweetly perfumed, and the bees, both hive bees and bumble bees, seem to find some attraction in them, as they are continually buzzing and humming around them to such an extent at times as to make the apiarist look round to discover if by any chance a swarm has lodged in their vicinity.

When any of our Australian or New Zealand cousins visit us, they are at once attracted by what they term "their Cabbage Trees," and are not a little surprised to find that in south-western Scotland these natives of the Antipodes are quite as much at home as in their native land (or at Torquay), thus dispelling, for them at least, the idea that Scotland is land of snow and mountains, where nothing thrives except the hardiest subjects. *A. T. Harrison, Culzean Castle Gardens.*

STYRAX HEMSLEYANUM.

THE comparatively new Styrax Hemsleyanum (Fig. 15) was shown finely at the recent R.H.S. Amateur Exhibition. The plant is a native of Central and Western China, and was introduced by Mr. E. H. Wilson in 1900.

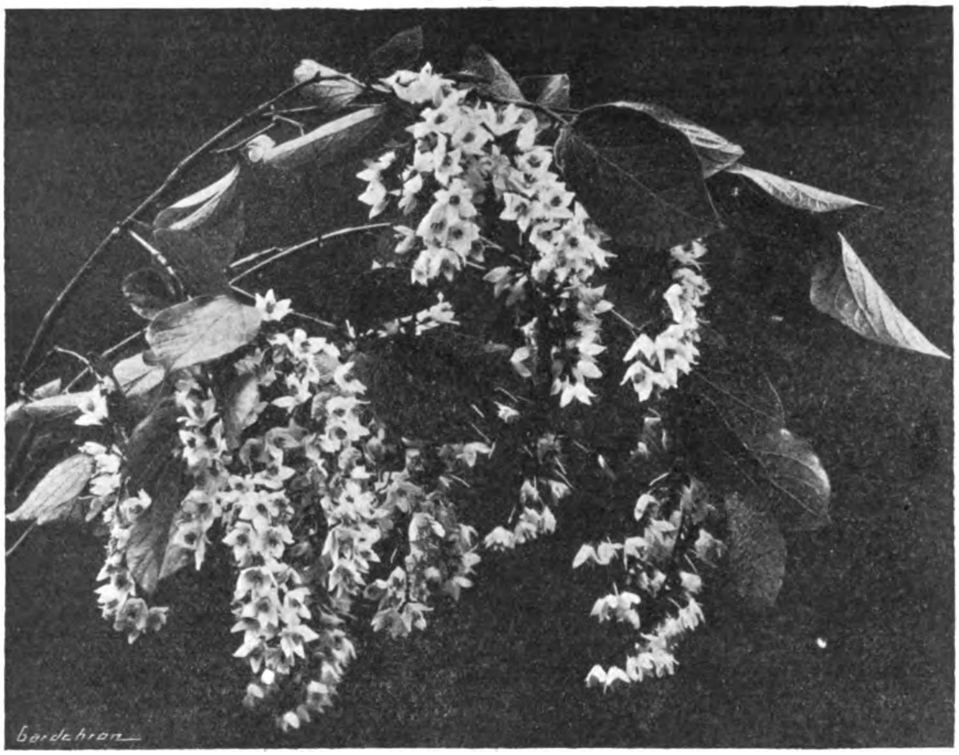

FIG. 15.—STYRAX HEMSLEYANUM.

The racemes of white flowers are drooping and show to advantage against the obovate, pale green leaves.

ERICA AUSTRALIS.

ERICA australis is one of the best of the taller Heaths; it is an old garden plant and has generally proved to be quite hardy in this country. I had it for a number of winters but in one exceptionally severe winter it was cut to the ground. It grew from the base, but was never so good again, having lost much of its symmetry. This Heath is not of rapid growth, but eventually reaches a height of from four feet to six feet. It is of erect habit and has beautiful foliage, surmounted by heads of red flowers.

Peat is universally recommended for Heaths, but, like numerous other Ericas, E. australis will grow in loam. I do not think it has the strong objection to lime possessed by some of the Heaths, as where I grew it there was some old mortar rubbish in the soil. The flowers appear from spring until July. Plants may be purchased in pots, and these travel much better than those lifted from the open ground. *S. Arnott.*

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CLASSICAL AND LEGENDARY GARDENS.

VIII.—The Gardens of Solomon.

LEGEND has always associated the name of Solomon with flowers and trees, pleasure grounds and gardens, and history supplies some justification for the age-long tradition. In the early chronicles of the kings we read that the wisdom of Solomon exceeded that of all the wise men of the East and of Egypt. "He spake of trees, from the Cedar tree that is in Lebanon even unto the Hyssop that springeth out of the wall; he spake also of beasts and of fowl, and of creeping things, and of fishes" (I Kings, iv. 33). Macalister remarks, somewhat rashly in my judgment, that this is the only hint of an interest in natural science that we find in ancient Hebrew literature. The parable of Gotham, however (Judges ix, 8-15), could hardly have been uttered by one ignorant of or indifferent concerning natural history. And what shall we say of the writer of the Book of Job? Or of the Canticles which, though attributed to Solomon, were doubtless the work of quite another nature-lover. The passage is of value for us, however, because it specifically notes the interest which the great king took in our subject, and we imagine that the words of Christ, when He compared the flowers with Solomon are an indication that in His day the two were constantly linked together. Let us see what evidence history and tradition afford us thereon. We are encouraged in our endeavour when we find so keen a critic as Professor Cheyne acknowledging that he sees no reason for not accepting the substance of the story as given in the passage already quoted, but follows the lead of Josephus.

It was easier in earlier days to prove that Solomon was fond of the garden than it is to-day, for men could adduce Ecclesiastes, the Song of Songs, and other works in evidence. Did he not say: "I made me great works; I builded me houses; I planted me vineyards; I made me gardens and orchards, and I planted trees in them of all kind of fruits; I made me pools of water, to water therewith the wood that bringeth forth trees." (Eccles. ii., 4-6). And what other can be inferred from such words as the following, but that King Solomon found delight in his garden?

> "Thy plants are an orchard of Pomegranates, with pleasant fruits; camphire with spikenard, spikenard and saffron; calamus and cinnamon, with all trees of frankincense; myrrh and aloes with all the chief spices. A fountain of gardens, a well of living waters, and streams from Lebanon. Awake, O north wind, and come thou south; blow upon my garden, that the spices thereof may flow out. Let my beloved come into his garden, and eat his pleasant fruits." (The Song of Solomon, iv., 13-16).

Even now, when the idea that these are the words of Solomon is no longer tenable, the passages, with others of a similar character found elsewhere, have value for us as showing how firmly fixed in the Hebrew mind was the idea that Solomon loved the garden. All the travellers who have visited Palestine in bygone days refer to Solomon's Pools. They are described as three magnificent reservoirs, lying in a valley known as Wady Urtâs, nearly at right angles to the road between Hebron and Jerusalem. Further down the valley a few of the characteristic square houses, encircled by lovely fruit orchards, where Figs predominate, mark the village of Urtas. This is thought to be the ancient Etham, and those orchards the successors of Solomon's gardens. It is worthy of note that the name Urtâs is usually regarded as a corruption of the Latin *hortus*, a garden, and if this is so, it would seem to show that when the Romans gained possession of these parts they were struck by the presence of gardens here, and named the place accordingly as The Garden.

Dean Stanley's account may be abbreviated. Every traveller from the desert, he states, will have been struck by the sight of the pleasant vale of Hebron, with its orchards and vineyards and numberless wells. Its fertility was in part due to its elevation into the cooler and more watered region above the dry and withered valleys of the rest of Judea. Here were the upper and the nether springs which Achsah claimed from her father Caleb. But between Hebron and Jerusalem is a spot which calls to mind the works of the peaceful reign of Solomon. In the long, green valley of Urtâs the king planted him vineyards and made him gardens and a paradise, and planted trees in them of all kinds of fruits, and made him reservoirs to water the same. From these gardens came, at least in part, the imagery of the Canticles: and in these, states Stanley, probably more than anything else, the wise king cultivated his knowledge of trees from the Cedar transferred from Lebanon to the Hyssop of the wall.

The great reservoirs still remain and bear the name of the King, while the square hill near-by is known to the Arabs as Jebel el-Fureidis, meaning the Mountain of the Little Paradise: "evidently from its vicinity to the gardens of the Wady Urtâs, which in the lament of Solomon are expressly called by this very name" (*Sinai and Palestine*, ch. iii). The passage from Ecclesiastes is one of the very few in the Old Testament in which we find the old Persian word for a park, viz., pairidaeza or paradise. It occurs in Hebrew as *pardês*, but though only employed three times in the original, it is frequently found in the Septuagint, the Apochryphal writings and the works of the Rabbis.

Though the history of the word is not even now entirely free from obscurity, there are those who think that it passed into the Hebrew through the commercial relations which Solomon established with distant countries; and in this connection it may be noted that many of the names of plants and spices which occur in the passage from the Song of Songs are of foreign origin, and do not originally belong to the Hebrew tongue. The ships which he sent to distant lands brought back all kinds of novelties, and these would be known by the names they bore in the lands from which they came. The wealthy and the great were wont from the earliest times to have beautiful gardens and pleasure grounds either surrounding or adjoining their residences, or at a distance outside the city; and that the same were usual in Palestine is proved from the references to the King's gardens in the Old Testament.

> "And the city was broken up, and all the men of war fled by night by the way of the gate between two walls, which is by the King's garden." 2 Kings, xxv., 4.

These gardens, as we learn from Nehemiah, were near the Pool of Siloam:—

> "He built it and covered it (*i.e.*, the gate of the fountain), and set up the doors thereof, the locks thereof, and the bars thereof, and the wall of the pool of Siloah (or Shiloah Isa. viii, 6) by the king's garden, and unto the stairs that go down from the city of David." Nehem. iii, 15.

Hebrew writers inform us that Solomon indulged his regal tastes in the cultivation of these gardens, planting therein all manner of exotic trees, shrubs and flowers. When we are told that his knowledge ranged from Cedar to Hyssop we are to understand the Alpha and Omega of plant life, or an antithesis between the largest and smallest of plants, with all the known forms that came between. There are various means of judging with a fair amount of accuracy what these plants would be. We have to-day a good knowledge of the distribution of plants, their native haunts, the ages in which the more important were sought out, the religious and ceremonial uses to which they were applied, and many other facts which are essential in order to avoid anachronism. We know that the influence of Egypt was already great, and that in the gardens of that great land at this time certain plants were cultivated for royal use and temple service. When, therefore, an early Italian artist introduces into his picture the Cedar and Cypress, the Palm and Pomegranate, Roses, with vases of Myrrh and Balsam, we are ready to admit that all these might be from Solomon's garden. Though written later than the time of Solomon, the passage in Ecclesiasticus (xxiv., 13-17) might have been spoken by him in personifying Wisdom.

> "I was exalted like a cedar in Libanus, and as a cypress tree on the mountains of Hermon. I was exalted like a Palm tree and as a rose plant in Jericho, and as a fair Olive tree in a pleasant field: and grew as a Plane tree by the water. I gave a sweet smell like cinnamon and aspalathus, and I yielded a pleasant odour like the best myrrh, as Galbanum, and onyx, and sweet storax and as the fume of frankincense in the tabernacle. As the turpentine tree I stretched out my branches; and my branches are the branches of glory and grace. As the vine brought I forth pleasant savour; and my flowers are the fruit of glory and riches."

Of the Cedar there can be no doubt. But what was the Hyssop? Skeat, in his *English Dictionary*, refers our word Hyssop, as usual, to the Hebrew *'êzôbh*, but admits that it is not known exactly what plant is intended. It has given rise to large speculation. Some hold that it is neither the Hyssop usually so called, nor the Origanum, because they are not such small plants as the antithesis with the Cedar would imply. They therefore suggest one of the wall mosses, such as Orthotrichum, which forms a kind of miniature Hyssop. Others identify it with the Caper plant (Capparis spinosa) because of the fondness of this creeper for rocks and walls. But no amount of speculation can ever settle a question like this. Nor is it necessary. The main point is that the King was held to be possessed of all the wisdom of Egypt, and more. That no plant, however lowly, escaped his observation, and that he was in the truest sense the highest authority of his age on every branch of nature lore.

Such being the case, while the gardens of Solomon belong in great part to the legendary, they also bring us into touch with the classical and so form an interesting link between the two.
Hilderic Friend.

JUDGING ROCK GARDENS.

In making a comparison between the judging of the rock gardens at Chelsea Show this year and three years ago, I think Mr. Hartless is wrong. The objections raised in that year were not so much on account of the injustice of the award as the method in which it was made. It will be remembered that before the actual award was announced officially, the exhibitor whom the judges considered worthy of it was actually congratulated on having received it. The final decision regarding these awards rests, however, with the Council, which reversed the decision of the judges. The position was complicated by one or more of the judges discussing openly the recommendation they had made previous to the consideration of their recommendation by the Council. There is little doubt that the consensus of opinion on that occasion was in favour of the Council's as opposed to the judges' decision. Nevertheless, the Council was severely castigated by pen and word for having dared to exercise its authority. This year matters were on a different footing. The judges made a recommendation that, estimated by the comments freely made all through the show by exhibitors and public alike, was unsatisfactory to about ninety-nine per cent. of those who took an interest in the subject. Moreover, the horticultural press, whose unbiassed opinion is often in print before the judging takes place, usually gives a very shrewd and correct pronouncement in intelligent anticipation. This year it was altogether at fault—according to the judges. It was rumoured, with what truth I know not, that the Council having been violently attacked three years ago, withheld its guiding hand on this occasion.

Although I agree with much that Mr. Elliott states, I do not follow him when he suggests that competitive awards should be abolished. Properly used, they should prove just the fillip towards a correct education of the public that should be one of the most valuable results of the Chelsea Show. If the system of judging were definite and correct, every exhibitor would study both construction and planting. Failing it, many might succumb to the commercial temptation to display anything and everything he had to sell, in any position available in a rock garden, built solely to accommodate as many plants as he had to dispose of, and thus create a false standard in the mind of the public uneducated in such matters. This has been done in the past, and is more pronounced amongst those who know in advance that their exhibit falls considerably below the premier award class.

Mr. Elliott is not quite right in stating that merit (according to the judges) goes without recognition at the Royal Academy. There is such a thing as a selection committee and an "on the line" position, and the mere admittance and hanging position of a picture becomes a sign of the committee's approbation: one could wish that this matter of selection could be observed at Chelsea, but it cannot.

The question of mere size should never enter into the consideration of the judges, nor does it always. I remember a few years ago Mr. Tucker being justly awarded a Gold Medal for one of the smallest rock gardens in the show, when much larger efforts were only awarded the Silver Banksian Medal.

The avoidance of the unhappy recurrence of ill-feeling that occurred at Chelsea this year should be perfectly easy by :—

1. Restricting judging for the premier award (*Daily Graphic* Cup) to rock gardens definitely entered for it, and allotting to these as nearly as possible similar positions.

2. Formulating a system of pointing that could even be based on the exhibitors' own suggestions.

3. Selecting judges conversant with all aspects of the subject, *i.e.*, aesthetic, constructional, and planting.

4. In cases where the pointing system creates a tie, to withhold the award of the Cup but give both competitors a Gold Medal.

With regard to this, it must be recognised that often one exhibit excels in its design and construction, another is far better planted, and in such a case the most elaborate pointing system might fail.

Under this system I do not think exhibitors would hesitate to take their chance and abide by the results, and if they collectively put forward some such suggestion to the Council of the R.H.S. soon, there is some hope of placing matters on a different footing before another Chelsea Show. *Geo. Dillistone.*

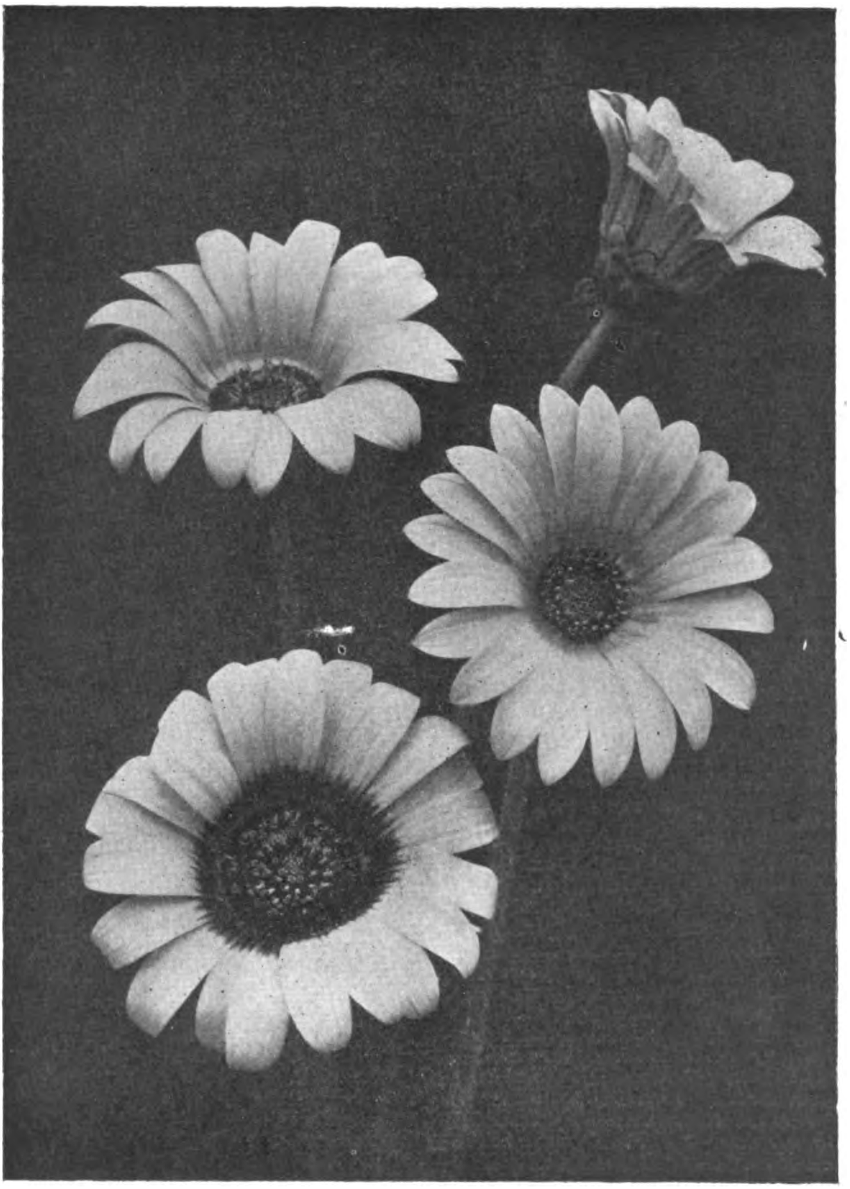

FIG. 16.—ARCTOTIS BREVISCAPA.

PLANTS NEW OR NOTEWORTHY.

ARCTOTIS BREVISCAPA

(SYN. SPECIOSA).

Among the numerous species of Arctotis now in cultivation, A breviscarpa (Fig. 16) is one of the most beautiful and easily managed. It is a very old plant and one of the first species to be introduced from the Cape. It is poorly figured in the *Bot. Mag.* for 1882 at tab 2,182 and in the text it is stated "Our drawing was taken from a plant communicated by Mr. Jenkins of New Road, who raised it from seeds received from the Cape without a name."

Seeds are only offered occasionally; the plant is so showy and desirable that it is well worth some attention from our seedsmen, and it ought to be readily obtainable. The plant is perennial but may be treated as an annual; from a February sowing flowering plants are obtained in about eight weeks.

Arctotis breviscapa is practically stemless, or creeping, and the pinnate, grey foliage is not very attractive, but this is amply compensated for by the brilliancy of the large, handsome flowers and by the great prodigality with which they are produced. In full sun the rich orange effect is most dazzling, and there are few Composites which produced more flowers per plant, each carried on a good stem twelve to eighteen inches in height. The flowers of different seedlings show some variation; some are wholly orange-coloured, while others have a deep brown zone and others a narrow ring of peacock blue around the disc.

As a subject for the decoration of the cool greenhouse or for summer bedding this is a plant of great promise. *T. Hay.*

[Arctotis breviscapa received an Award of Merit from the Royal Horticultural Society on June 29, when it was exhibited by Mr. Hay, to whom horticulture is indebted for re-introducing a very handsome plant.—Eds.].

FORESTRY.

TREES INJURED BY FARM STOCK.

In connection with estate and park management, few things have a more unsightly and neglected appearance than trees and shrubs which have become barked and otherwise injured by farm stock or ground game. Not only have such trees an unsightly appearance, but the damage thus inflicted, if not quickly fatal, is highly injurious to their health, and a long period of time is often required before they regain their original vigorous appearance.

Where the park grounds are extensive, it is usual to utilise certain portions for the grazing of horses, cattle or sheep, and unless protected, both trees and underwood suffer greatly, whether from the gnawing or rubbing propensities of these animals. The worst effect is, perhaps, in the case of young plantations to which sheep have gained access, for the nibbling of the shoots is little short of poisonous, while the wool that becomes attached to the trees is likewise injurious and by no means readily removed. The injury ground game, and particularly hares and rabbits, cause to recently-planted trees and shrubs is well-known, and whole plantations have on certain estates required to be replanted owing to the attacks of these rodents. In the case of park trees, all kinds do not suffer alike, such as are old and rough barked being more or less immune, the younger specimens, the bark of which is comparatively young and thin, being most likely to suffer from the attacks of farm stock generally.

Certain kinds of trees are, however, more frequently damaged than others, and the Willow, Elm, Poplar, and various species of Thorn and Pyrus, when young, evidently fare worse, while Oak, Beech and Birch are less frequently stripped of their bark.

In connection with the gnawing propensities of horses and cattle, it is a curious fact that bitter-barked trees, such as the Willow and Alder, are as frequently attacked as those whose sap is comparatively sweeter or less astringent. The treatment of injured trees and shrubs, as by an application of tar to the bark, stems and branches, and removal of the damaged portions, can only be considered in the light of a makeshift, for, unless the stock is removed or the trees properly protected, the damage is bound to be continued.

Protective measures before animals are admitted should always be adopted, and there is no better method than surrounding such trees as are likely to be attacked by a cheap and effective system of fencing. Many kinds of tree-guards, both of iron and wood, are on the market. A cheap and effective guard, the materials for which are common on most estates is made as follows :—Provide tolerably straight Larch or Chestnut poles, about seven feet long and three to four inches in diameter, one side being chopped as flatly as possible. Procure hoop iron, of about similar thickness to that made use of by coopers in the construction of light barrels, and punch holes through at about six inches to eight inches apart. Nail this to the flat sides of the poles at about twelve inches from top and bottom ; this work is best performed on the ground. Bend this in a circular fashion around the tree stems to be protected, and make the ends secure by clenching a nail through the iron hooping at top and bottom. A double wire twisted around the poles at the required distance apart, as in the case of cleft Chestnut fencing, will serve the desired purpose equally well. The height to which the poles should reach will depend on the type of stock that it is intended to guard against. If for horses, six or seven feet will not be too high, while, if only cattle are to be admitted, five feet poles will be sufficient. Previous to erecting the guard, all broken bark and branches should receive attention, chafed wood smoothed over by means of a pruning knife, and a coat of paint added, to be followed when dry by a covering of gas-tar. All broken and twisted branches should be neatly pruned off, and the tips of others cut back as far as farm stock can reach. Though wire-netting, when placed around the stems of trees, will prevent horses and cattle from gnawing the bark, yet it has been found dangerous, and is now seldom used, especially where horses are allowed to graze. If used, it should be kept at a distance from the ground level, so that horses' shoes will not get entangled in the meshes. The horns of cattle also are apt to get caught in the meshes of the netting, so that unless very firmly placed around the stem of the tree, which again has its disadvantages, its use is not to be recommended. On an estate known to the writer, several valuable horses were lamed by their shoes getting entangled in the meshes of wire netting that had been placed around tree stems to prevent gnawing and barking.

Where sheep are allowed access to woods or shrubberies, a considerable amount of damage is sometimes caused by the animals nibbling the shrubs. Sheep should never be admitted to young woods, and when damage has been done, the pruning of all affected shoots should receive immediate attention. If sheep are allowed to graze in a field adjoining a shrubbery, the best fence is one made of wire-netting or sheep hurdles.

In order to prevent horses and other farm stock from gnawing newly-erected wood fencing, paint the latter with creosote or carbolineum and bitter aloes, in the proportion of a gallon of the former to one ounce of the latter. Or, paint the fence with hot tar, and before this becomes dry sprinkle the surface with sharp sand. A teaspoonful of tincture of asafoetida in half-a-bucket of liquid clay, applied with a brush has been found useful in preventing hares from injuring trees, and there is little doubt but that it would prove equally effective in the case of horses and cattle. *A. D. Webster.*

INTERVARIETAL DIFFERENCES IN THE POTATO.

(*Continued from p.* 15.)

LEAVES.

The mature leaves of Potato varieties differ in the following characters :—frequency, size, set on stem, openness, number of primary leaflets, number and position of secondary leaflets, colour of midribs and condition of stipules.

(*a*) *Frequency.*—Although it may not be realised always, the frequency of the leaves constitutes a very important diagnostic character. Leaves may be numerous or few ; when they are numerous the plant presents a compact appearance, and when they are few an entirely different aspect is produced. It is principally in this feature of compactness that Arran Comrade is distinguished from Great Scot, and Crusader from Golden Wonder.

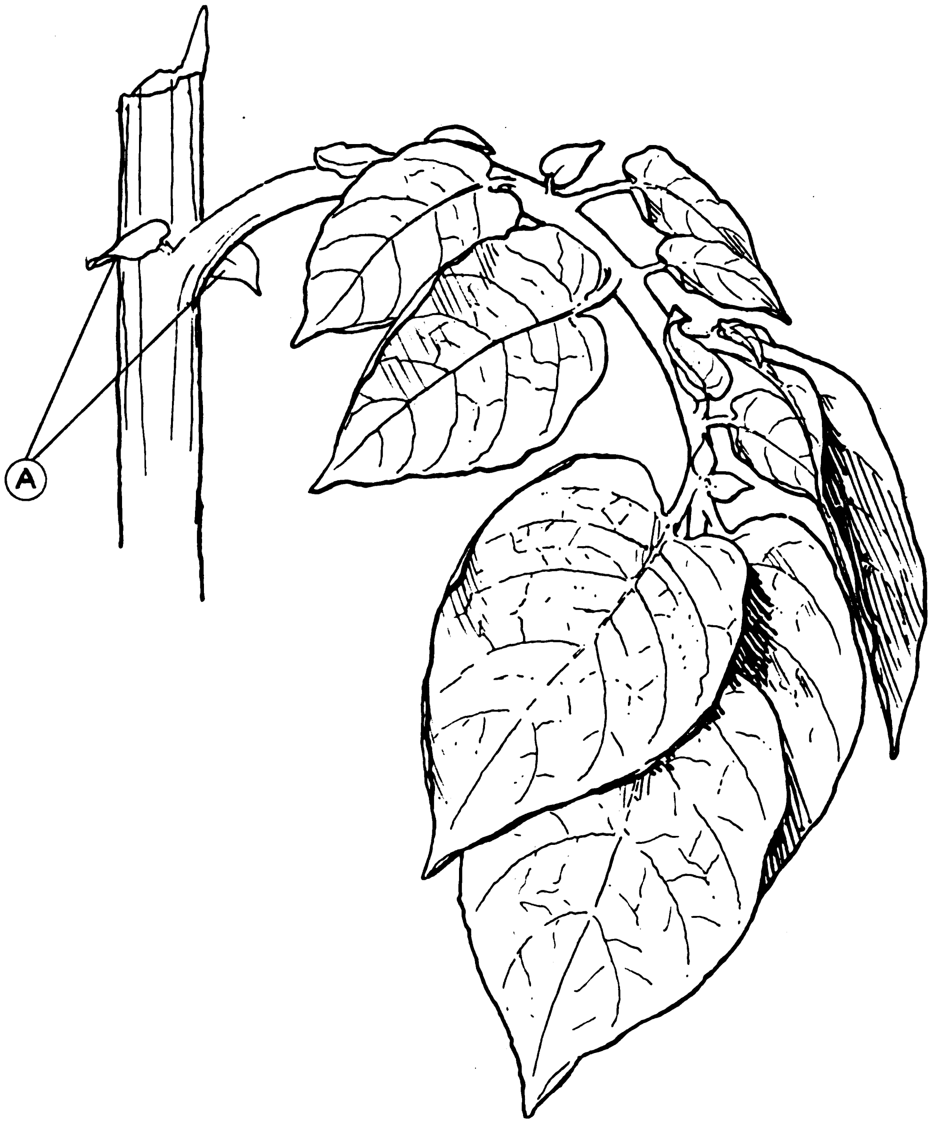

FIG. 17.—POTATO LEAF SHOWING NON-RIGID, DROOPING MID-RIB AND (A) HALF-MOON-SHAPED STIPULES ENCIRCLING THE STEM. THE VARIETY IS KATIE GLOVER.

(*b*) *Dimensions.*—Leaves may be long or short, and broad or narrow. All combinations occur. Up-to-date, White City and Immune Ashleaf are varieties which have exceptionally long leaves ; President, Blue Grey, The Dean and Northern Star are varieties whose leaves are short. The relative length is a more helpful character than the width, yet on occasion the latter may be quite useful, *e.g.*, Duke of York may be distinguished from Immune Ashleaf by its narrower leaves.

(*c*) *Set on Stems.*—This important feature is somewhat difficult to define, as it is composite in nature and includes certain peculiarities of the leaflets. The outstanding characteristics, however, would appear to be the presence of or want of rigidity, in the leaf midrib. Where the midrib is rigid the leaf makes a more or less definite angle with the upper stem. In some varieties, *e.g.*, President, this angle may be small; in others, *e.g.*, Templar, it may be larger. On the other hand, the midrib may not be rigid and may droop (Fig. 17), in which case quite a different appearance is produced. Although rigidity of midrib constitutes the main feature of the leaf set, the leaflets may contribute a share to the general aspect; the rigidity, or want of rigidity, of the leaflets may alter considerably the leaf set.

(*d*) *Openness of Leaf.*—Fig. 18 and Fig. 19 illustrate what are known as open and close leaves. An open leaf is one in which the leaflets are not crowded, and where comparatively large intervals exist between the leaflets. Where opposite conditions prevail the leaf is termed close. Intermediate types occur, but varieties with open leaves may always be separated from those with close leaves without the slightest difficulty. Abundance, Irish Queen and Miller's Beauty may be distinguished from the other members of Group 6 by this characteristic. However, even within the close-leaved varieties, distinctions may be drawn; some varieties, *e.g.*, Lochar (Fig. 19) and Sharpe's Express, owe their close leaves to the number of secondary leaflets; in others, *e.g.*, Irish Queen, the characteristic is due more to the overlapping of the primary leaflets.

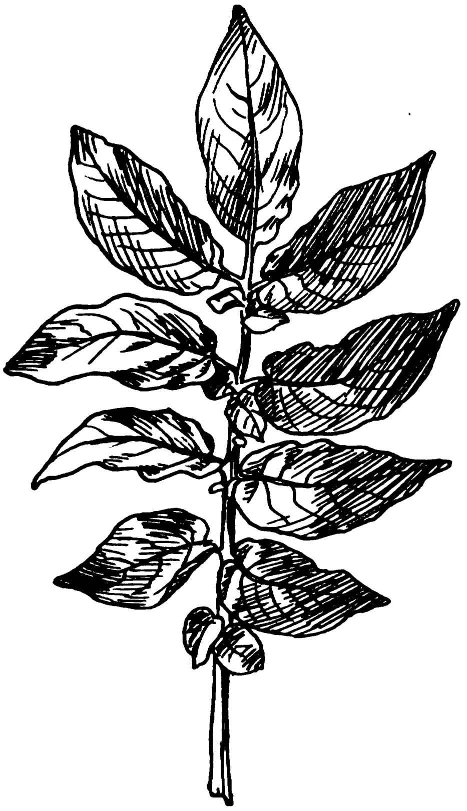

FIG. 18.—POTATO LEAF: OPEN TYPE OF THE VARIETY CHAMPION.

(*e*) *Number of Primary Leaflets.*—Varieties may be grouped as having numerous or few primary leaflets. In the former class are found such varieties as White City, Up-to-Date, Marconi, Immune Ashleaf, and Sharpe's Express; while in the latter, Myatt's Ashleaf, Lochar, Ally, President, General and Blue Grey. Marconi and President, two varieties which resemble one another very closely, may be differentiated quite readily by the frequency of the primary leaflets.

(*f*) *Number and position of Secondary Leaflets.*—The number and position of the secondary leaflets are of great importance in many varieties. For example, there are some, such as are found in Group 4, which are conspicuous by the number of secondary leaflets; others, *e.g.*, Arran Consul, on the contrary possess comparatively few secondaries, and where these do occur they are rudimentary and inconspicuous. Absence of secondaries on the midrib between the terminal leaflets and the last pair of leaflets is characteristic of the varieties Champion and Ally. The majority of secondary leaflets are to be found situated between the pairs of primary leaflets on the midrib of the leaf. Some varieties, however, *e.g.*, Rhoderic Dhu, are characterised by development of large secondary leaflets situated immediately at the junction of the petioles of the primary leaflets with the midrib of the leaf. A few, again, *e.g.*, Dargill Early, are outstanding by the frequent formation of secondary leaflets on the petioles of the primary leaflets.

(*g*) *Colour of Midribs.*—At times, the colour of the midrib is distinctly useful in diagnosing types. Royal Kidney and Evergood are varieties which are easily confused. They can, however, always be separated by the absence of pigment on the midrib of Evergood, and its presence, although only to a small extent, on that of Royal Kidney. Many varieties have green midribs, *e.g.*, Ally, Evergood, Duke of York, Lochar, Arran Comrade, Rhoderick Dhu and Great Scot. In other varieties the midribs are coloured—purple in such varieties as Pride of Bute, and reddish in others, *e.g.*, Ranfurly Red and Kerr's Pink. Frequently the colour is located only at the base of the midrib and the bases of the leaflet petioles. In Rector and Dean these are reddish, while in Champion, Lord Tennyson and Irish Chieftain, they are purple. Faint colouring is developed in some varieties, *e.g.*, Bishop, Majestic and Magnum Bonum, but such a diversity of types exists that space does not permit the inclusion of further detail in this paper. The midrib is usually most highly developed in young leaves; faint colour often disappears with age.

(*h*) *Stipules.* The stipules (Fig. 17) are somewhat half-moon shaped and encircle the stem when fully developed. With age they often grow large and leaf-like. The characteristics which are useful in field work are the relative sizes, and the presence or absence of hairs on the upper surfaces of the stipules. Kerr's Pink may be distinguished from Gregor Cups, which it resembles closely, especially when affected with mosaic disease, by having large, glabrous stipules, while those of Gregor Cups are small and hairy. Such differences exist between other varieties, but generally these are so different in grosser characters that reference to stipules is quite unnecessary. *T. P. McIntosh.*

(*To be concluded.*)

SULPHUR: ITS USE AS AN INSECTICIDE AND FUNGICIDE.

SULPHUR is probably the oldest fungicide known, yet, in spite of this, its action as such has only recently been investigated and understood. Sulphur may be obtained in quite a number of chemical combinations, but all these forms are by no means equally effective as fungicides. In commercial horticultural practice, it is usually employed in one or other of the following chemical forms:—lime-sulphur or calcium polysulphide, ammonium polysulphide, liver of sulphur (sometimes called by the more scientific term, potassium sulphide), green sulphur, flowers of sulphur, calloidal sulphur, sulphur paste, and special dusting sulphur.

It is a well-known fact that in the vicinity of a plantation where lime-sulphur spraying is in progress, a very decided sulphury smell is discernible, particularly on a sunny day. The smell is due to the presence of a gas, which is characterised as having an odour resembling that of rotten eggs and is known as sulphuretted hydrogen.

When diluted lime sulphur, or, in fact, any wash containing sulphides or polysulphides, is sprayed on a tree, a direct toxic action upon fungi, if present, occurs, due to the presence of these active agents. Possibly their action is enhanced by the evolution of this sulphuretted hydrogen in a transitional manner, which is produced by the action of the carbon-dioxode of the air in decomposing the lime sulphur.

Various other sulphur compounds are also produced, some being soluble, others insoluble, these having been proved by Salmon and Horton to be practically ineffective as fungicides.

The principal and resulting product formed from this interaction between the air and lime-sulphur solution on the tree surface is sulphur in a very finely divided state, and having been deposited actually from solution, it is present in a more or less continuously thin film, wherever the lime sulphur has reached during spraying operations.

There seems little doubt that so soon as the polysulphides have become decomposed, there is a distinct loss of the fungicidal toxicity of the solution, as the sulphur becomes deposited therefrom, as shown by the results obtained at the Long Ashton Experimental Station.

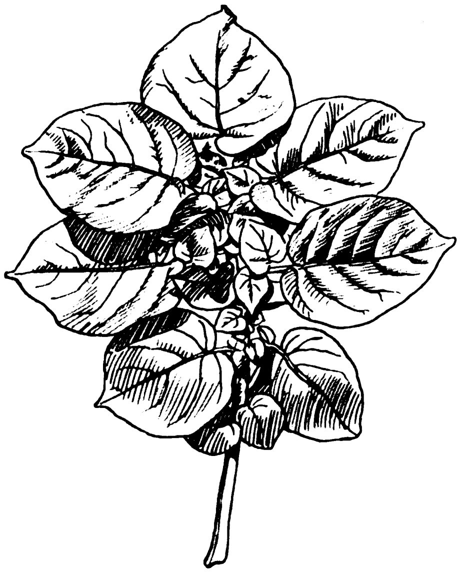

FIG. 19.—POTATO LEAF: CLOSE TYPE OF THE VARIETY LOCHAR.

It has been proved, however, that sulphur itself does possess fungicidal properties, and these become more pronounced with increase in temperature and in the presence of sunlight, a fact which probably explains the continued or lasting beneficial results observed following an application of lime-sulphur solution.

Research work at Long Ashton has shown, too, that it is not necessary for the sulphur to be in actual contact with the fungus in order to kill or inhibit the germination of fungus spores; there is evidence that either as a result of the volatilisation of the sulphur or the formation of some volatile compound, a toxic vapour phase or localised sulphur atmosphere is formed, which is toxic.

Results indicate that sulphur particles in contact with a fungus spore may be actually dissolved and absorbed by the fungus as a result of fungal secretion; this in turn may possibly form a toxic sulphur compound within the contents of the spore and kill it.

Sulphur is recognised as an excellent specific for certain diseases, while for others it appears to be of little use. For instance, canker appears to be particularly susceptible to sulphur, while Cladosporium fulvum is considered by some people to be controlled more effectively by a copper fungicide. Below are given the chief features and properties of the various forms in which fungicidal sulphur is obtainable, together with their specific uses.

STANDARD LIME-SULPHUR SOLUTION.

Specification :—Specific gravity 1·300 ; should contain not less than 25 per cent. polysulphide sulphur, free from sludge, and completely soluble in water.

In the past, it has been customary to buy and sell this material on a basis of a specific gravity of 1·300. This is obviously not sound, because anyone with unscrupulous tendencies could add a soluble salt to a low-grade lime-sulphur and bring its specific gravity to standard without in any way increasing its efficiency.

It is now recognised that of all constituents that go to make up lime-sulphur, the polysulphide sulphur content is the one that really matters, and it will be plain that the higher the percentage of this particular ingredient, the better the quality of the wash for use as fungicide.

The principal uses of lime-sulphur are :—

(1) As a means of destroying scale and certain fungous spores and imparting a recognised tonic action to the tree, lime-sulphur may be used during the late dormant period at a dilution of, in 1-20 conjunction with a soluble spreader.

(2) As a summer aphis wash, particularly for Plum aphis before the leaves curl, one gallon to sixty to eighty gallons of water, plus four ounces of nicotine to every one hundred gallons of prepared wash, with the addition of a spreader, has been found very effective.

(3) The trials at East Malling have shown that lime-sulphur solution, of a gravity of 1·025, *i.e.*, winter strength, just as the bloom trusses are appearing, but before they open out, will effectively kill off the big-bud mites on Black Currants. Slight scorching will undoubtedly occur, but the bushes suffer no ultimate damage. The most successful results from lime-sulphur spraying are produced when the wash is used in conjunction with a soluble Casein spreader.

AMMONIUM POLYSULPHIDE SOLUTION (A.P.S.)

Specification :—Specific gravity 1·02, contains not less than 28% total sulphur, 6% sulphide sulphur, and 21% polysulphide sulphur ; free from sludge, and on dilution with water 1-200, it should not deposit sulphur within thirty minutes.

This wash is specially recommended for controlling Apple mildew (Podosphaera leucotricha) at a dilution of one gallon in two hundred gallons of water, used in conjunction with a spreader. It is an excellent preventive and curative for controlling American Gooseberry mildew, but it must be used with caution upon the "sulphur" varieties, as it is liable to cause defoliation and dropping of the fruit.

Recent work carried out by R. M. Nattrass of the Long Ashton Experimental Station in a series of preliminary trials has shown that ammonium polysulphide applied immediately after the setting of the flowers, and the second spraying given in early June, has given very good results. The material was used at the rate of four pints, plus five pounds of soap, made up to one hundred gallons of water.

The figures showing the amount of clean fruit are : ninety pounds clean fruit, four pounds mildewed fruit.

Ammonium polysulphide at the current market price of 5/6 per gallon in forty-gallon barrels, containing 20-21 per cent. polysulphide sulphur, should prove a very sound proposition for the commercial orchardist.

The work of Salmon and Horton shows the fungicidal value of the polysulphide sulphur on mildew, as given below :—

Strength of lime-sulphur.		Per cent. of polysulphide sulphur.		Per cent. of calcium caseinate.		Results.
A-1·99	...	·16	...	1·0	...	Fungicidal
B-1·149	...	·11	...	1·0	...	Fungicidal
C-1·199	...	·8	...	1·0	...	Doubtful

ROSE MILDEW.

Owing to the fact that ammonium polysulphide does not disfigure the foliage or bloom on account of the almost invisible film it leaves, it is particularly suitable for the cure of Rose mildew, for decorative plants, as well as for dessert fruit, where disfigurement by a deposit of sulphur would lower the marketable value. It is effective in destroying and preventing this unsightly Rose disease, and at the same time, if used in conjunction with soap, will destroy aphis. Tomato, Chrysanthemum and Carnation rusts all respond to an application of this fungicide.

SPECIAL DRY DUSTING SULPHUR.

Specification :—This form of sulphur is a recent introduction, and the product contains not less than 95% of material which will pass a 200-mesh-to-the-inch sieve, and is free from any other deleterious products. This sulphur is specially recommended for Hop dusting, and it should be suitable for use under glass in the control of certain fungous diseases, and for all other purposes where a good quality dusting sulphur is required. This particular grade is extensively used in the French vineyards for controlling various fungous diseases, to which the vine is subject.

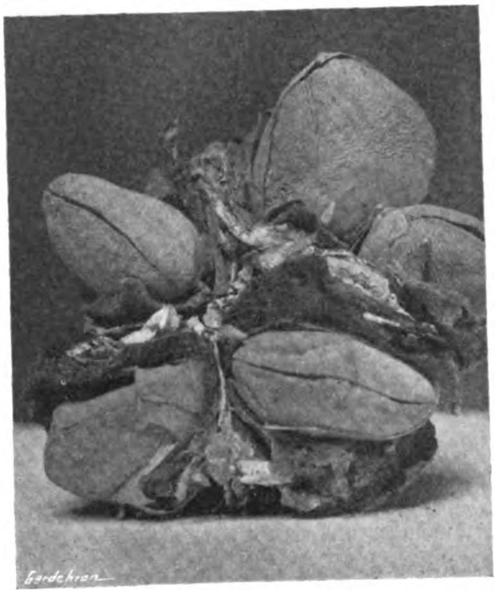

FIG. 20.—CHEIRIDOPSIS PECULIARIS, N. E. BR.
Clump of a plant, as introduced.
(see p. 35.)

SIEVING ANALYSES OF DRY DUSTING SULPHUR.

Samples from bulk.		Retained by 90 mesh.	Retained by 120 mesh.	Retained by 150 mesh.	Retained by 200 mesh.	Passing a 200 mesh.
		Per cent.	cent.	cent.	cent.	cent.
A. First grade	...	·0	·0	·0	1·3	98·2
B. " "	...	·0	·0	·0	·19	98·0
C. Second grade	...	·5	·5	·3	2·2	94·6
D. " "	...	·0	·6	·6	10·85	83·1
E. " "	...	·0	·0	1·1	10·1	85·6

LIVER OF SULPHUR.

Specification :—Greenish yellow solid, containing 43% to 45% sulphur ; soluble in water and should give a moderately clear solution.

The wash is not used to any great extent, it having been superseded by lime-sulphur and ammonium polysulphide. It is rather caustic in its action and should be used with caution on tender plants. The usual strength is three to five ounces in ten gallons of water with or without the addition of soap.

GREEN SULPHUR.

This is a dry, dusting form of sulphur and usually contains anything from 33% to 43% actual sulphur (free), with a small proportion combined with iron in the form of sulphide

Green sulphur has had an extended use as a dust, particularly under glass, but its saving grace is the fact that it is usually in a very fine state of division and therefore easily "dusted."

Its efficiency as a fungicidal dust, however, cannot be compared with that of a good quality dusting sulphur. Sieving analysis showed a good sample to give :—46% passing a 200-meshes-to-the-inch sieve ; 23% retained by a 200-meshes-to-the-inch sieve ; 15·5% retained by a 150-meshes-to-the-inch sieve ; 10·5% retained by 120-meshes-to-the-inch sieve ; 5% retained by a 90-meshes-to-the-inch sieve.

Comparing the price of green sulphur with that of any good dusting sulphur, there is little doubt that it is an expensive proposition, particularly when its sulphur content is taken into consideration.

FLOWERS OF SULPHUR.

Specification :—It is somewhat difficult to give a specification for flowers of sulphur, because commercial grades on the market vary considerably. Below is given a typical analysis of a sample of flowers of sulphur offered for horticultural purposes :—47·6% passing a 200-meshes-to-the-inch sieve ; 42·8% retained by 200-meshes-to-the-inch sieve ; 7·1% retained by 150-meshes-to-the-inch sieve ; 2·3% retained by 120-meshes-to-the-inch sieve.

Flowers of sulphur have an extended use amongst Hop growers for dusting against Hop mildew, and also under glass for the control of rusts. The great objection to flowers of sulphur from the point of view of dusting is that, as offered commercially, it is not in a sufficiently fine state of division to be of much use as a fungicide.

It will be seen from the above that only about 40% passes a 200-mesh sieve, which is absolutely a minimum for the size of particle for dusting purposes. Flowers of sulphur are sometimes used under glass for control of vine mildew and other mildews, by making a mixture of either lime-wash and sulphur or milk and sulphur, and painting this on the water-pipes, whereby the sulphur becomes volatilised. Great care must be taken in carrying out this operation, as if the pipes become too hot there is a tendency for the sulphur to become oxidised and, therefore, liable to scorch.

Flowers of sulphur are sometimes used to burn during the dormant period as a means of fumigating against certain pests, but it is very much open to doubt whether burning sulphur fumes have such a high insecticidal or fungicidal value as is sometimes claimed.

COLLOIDAL SULPHUR.

In recent years, a form of sulphur has been introduced on the market which has been prepared in a colloidal mill in which sulphur is ground in a liquid medium by admixture with water between very high-speed revolving discs. The particles of sulphur do not settle, and the mixture may be used with any ordinary spraying machine or atomiser.

Colloidal sulphur has exactly the same chemical constitution as flowers of sulphur, but owing to the fineness of its particles, it is in a much more active chemical condition.

The actual size of the particles is approximately 1/25,000 part of an inch, or just about the size of bacteria.

A better idea of the comparative sizes of the particles of colloidal sulphur and flowers of sulphur may be gathered from the fact that an average particle of flowers of sulphur has approximately 250,000 times the bulk of one particle of colloidal sulphur.

Colloidal sulphur, being so much finer than flowers of sulphur, can penetrate where the latter cannot. It is evenly distributed and adheres to the leaves. It has a stimulating effect on the foliage and may be used with perfect safety where ordinary flowers of sulphur would be used for insecticide purposes.

Colloidal sulphur has been proved effective against mildews, and its use under glass for controlling Tomato mildew (Cladosporium fulvum) has given very promising results indeed.
Theodore Parker.

MESEMBRYANTHEMUM.

(Continued from p. 9.)

8.—CHEIRIDOPSIS, N. E. Br.

C. Pearsoni, N. E. Br.—Stemless, tufted, 1½-2 inches high including the flowers. Leaves 1-2 pairs to a growth, the sheath part 3-6 lines long and their free part (in the dried specimen) 8-15 lines long, and 1½-2½ lines broad and thick, flat above, keeled on the back, of nearly equal thickness throughout, acute or rounded into an acute apex in side view, glabrous, dotted all over on the sides. Pedicel 6-9 lines long, scarcely 1 line thick, bractless, glabrous. Calyx 5-lobed, glabrous: ovary-part hemispherical, 3½-4 lines in diameter; lobes 1½-2½ lines long, all broadly ovate, obtuse or acute, three of them with membranous margins. Corolla about 1¼ inch in diameter, petals numerous, 6-7 lines long, linear, light yellow or yellowish with a pinkish tinge. Stamens numerous, erect, about 2 lines long, apparently yellow. Stigmas 7-8, about 1 line long, subulate, united at the base into a slight cup. Fruit not seen.

Little Namaqualand: Khamiesberg region, growing in wet sand in Naras Ravine, Pearson 6435! and in damp grown at Bailey's Vlakte, Pearson 6440!

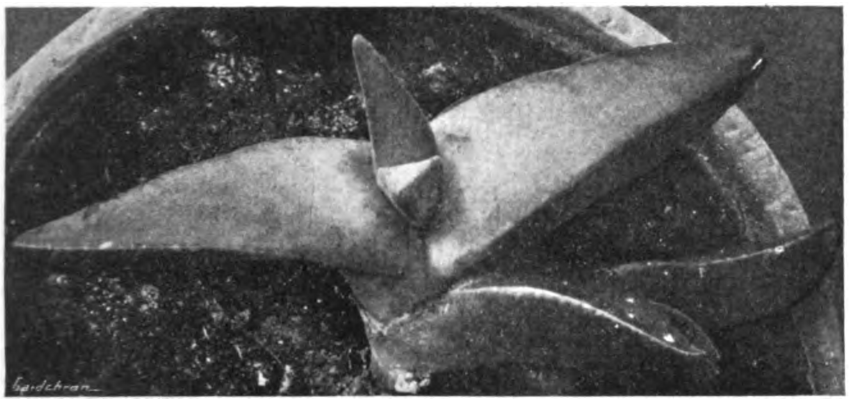

FIG. 21.—CHEIRIDOPSIS PECULIARIS, N. E. Br.

One of the growths cut from the specimen shown in Fig. 20 and rooted.

This has been distributed as being Mesembryanthemum robustum, Haw., but that is a very different and much stouter plant.

C. peculiaris, N. E. Br. (Figs. 20, 21, 22, and 23).—Stemless, forming with age clumps of several growths (7 on the only plant seen). Root of old plants about 3½-7 lines thick, descending deeply into the ground. Each growth, as seen on a newly imported plant in a state of rest (Fig. 20) consisting of two erect leaves, free nearly to their base, with their flat faces closely applied to one another, forming a compressed, orbicular-ovate body 10-15 lines long, about the same in breadth and 5-8 lines thick, enclosed in a semi-transparent skin (the dried sheath of a previous pair of leaves) of a somewhat parchment-like texture: these leaves are flat on their applied surfaces, convex and faintly keeled at the back, rounded at the apex, with a minute apiculus, glabrous, pale, greyish-green or sub-glaucous-green, with or without a purplish tint, and indistinctly dotted with darker green.

Under cultivation in England, when rooted, the two leaves of each growth separate and spread out flat. Between them arises a pair of shorter leaves united for half or more than half of their length, with their short tips ascending or spreading, deltoid-ovate, subacute, flat above, keeled on the back. These were succeeded by a much larger pair 1½-1¾ inch long, united for half their length into a sub-cylindric body 8-9 lines thick, with the free tips ascending-spreading, deltoid, subacute, flat above, keeled on the back. After a period of rest these were followed by a pair of elongated-deltoid acute leaves 1¼-2 inches long, 6-8 lines broad, and 3-4 lines thick (nearly as in Fig. 21), free nearly to the base, flat on the face and keeled on the back, having their basal part enclosed in the skin formed by the withered sheath of the preceding pair. This third pair probably corresponds in sequence with the sub-orbicular pair upon the imported plant. If kept watered, the plant grows as represented at Fig. 21 but if given dry treatment and allowed to rest, it assumes the forms represented in Figs. 22 and 23.

All the leaves are smooth, glabrous, sub-glaucous-green, or greyish-green, more or less tinted with purple when exposed to full sunlight, dotted (chiefly on the back) with darker green. Flowers solitary, terminal. Pedicels 2½-2¾ inches long and about 1¾ line thick, terete, smooth, glabrous, green, arising from between a pair of leaves similar to those of the resting stage but united for only about half their length. Calyx unequally 5-lobed: lobes spreading, two of them 7-8 lines long and the other three 5-6 lines long, linear-lanceolate or deltoid-lanceolate, from an ovate base 3½-4 lines broad, acute, keeled on the back, smooth and glabrous, the saucer-shaped ovary-part 6½ lines in diameter and 2½ lines deep, and together with the base of the lobes green, the upper part of the lobes dull slaty-purple. Corolla 2 inches in diameter, opening in the morning and closing at sunset, or earlier if the temperature is insufficient, and lasting for about two weeks. Petals numerous, in 4 or 5 loosely imbricating series, 9-10 lines long, ½-¾ line broad, linear, obtuse, clear yellow, not shining. Stamens very numerous, surrounded by about one series of filiform staminodes; for the first nine or ten days all are connivent in a cone and conceal the stigmas, afterwards separating and standing erect around the stigmas, 3-5 lines long, the inner being much shorter than the outer; staminodes and filaments (which are bearded at the base) yellow like the petals: anthers somewhat orange-yellow. Stigmas 14-15, about 1½ line long and shorter than the stamens, subulate, plumose, acute, pale yellowish connivent until the pollen is shed, then ascending-spreading with recurved tips, but very crowded. Ovary partly superior, very convex on the top, with 14-15 cells. Capsule, when closed, 6-8 lines in diameter and 3-4 lines in depth, flattened on the top, with about 14-15 valves and cells, light brown; when expanded and the valves reflexed 9-11 lines in diameter: valves about 3 lines long and 1 line broad at the base, somewhat hatchet-shaped at the apex in side view, pallid; expanding-keels contiguous at the base, diverging above, toothed along the edges, dark brown, ending in linear, sub-membranous, paler points extending nearly to the tips of the valves, upcurved and obliquely truncate at their tips, and with rather narrow membranous, brownish, marginal wings at the basal half; cells very acutely roofed with rather stiff, light brownish cell-wings turned back at the opening like the mouth of a trumpet, and the opening nearly closed by a large pallid tubercle. Seeds ½ line long, ovoid, smooth, brown.

Namaqualand: Locality and collector unknown.

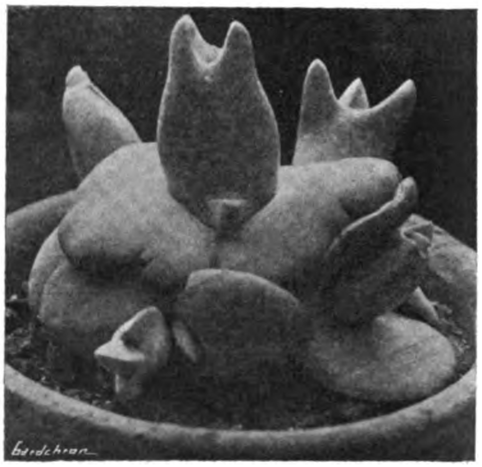

FIG. 22.—CHEIRIDOPSIS PECULIARIS.

A plant in growing condition.

I received an old plant of this remarkable species early in 1920 from Mrs. Dorée of Ilford, a few plants having been sent to her husband from South Africa, but arriving after his death. A photograph of this plant taken by my daughter is represented by Fig. 20. Fig. 21 is from a photograph of the plant as cultivated at Edinburgh Botanic Garden, kindly sent to me by its Regius Keeper, Professor W. W. Smith; and Figs. 22 and 23, represent the plant slightly more than half natural size, as cultivated at Seven Kings by Mr. D. O'Donoghue, to whom I am indebted for the photographs. The three plants represented by these figures were all identical in appearance when first imported, but the different conditions under which they have been cultivated has had a very marked effect upon their development, and had not their history after importation been accurately known, it would be difficult to credit that all these figures represented but one species.

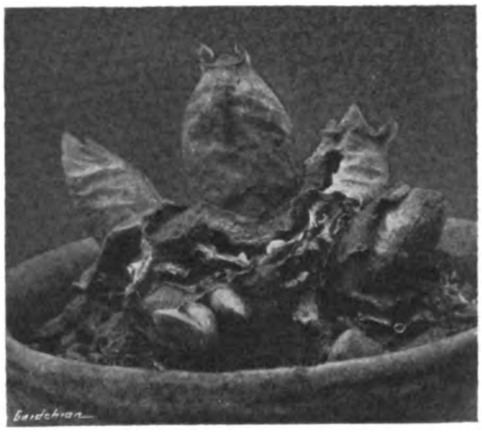

FIG. 23.—CHEIRIDOPSIS PECULIARIS.

The same plant as in Fig. 22, from the same point of view, when at rest: about half natural size.

Mr. O'Donoghue informs me that with him "it seems to flower freely," and to him I am also indebted for the fruit of this plant. The flower from which my description was made was sent to me by Mr. T. M. Endean, of Laindon, Essex. *N. E. Brown*

(To be continued.)

VEGETABLE GARDEN.

BRASSICAS.

CABBAGES, Kales, Savoys, Brussels Sprouts, Couve Tronchuda, Coleworts and other greens classed under Brassicas are amongst the most valuable crops of the kitchen garden.

The Cabbage will grow well in almost any soil, but does best in deeply-tilled, firm ground that is not too heavy in texture.

Seeds of the spring varieties may be sown at any time from the third week in July until the middle of August.

The seed-bed should be made in an open situation on ground of a light texture. The seeds should be sown thinly in drills made one foot apart and about half an inch deep. One ounce of seed will be ample for eight square yards.

As to cultivation generally, the same methods apply to all Cabbages. When the seedlings are about two inches high they should be pricked out by hand, during open weather, into reserve ground that has been well-trenched and manured liberally, but which has not been cropped the previous year with any member of the Brassica family. Common sense will dictate the season at which these nursery plants should be transferred finally to their permanent quarters. In all cases a small depression should be left around the base of each plant to facilitate watering and help to hold any rainwater that may lodge therein.

As the Cabbage plants mature and become top-heavy, as is their tendency in many cases, the rows should be examined frequently and an odd stake or two may be required to support them. When the plants are blown to and fro by the wind the soil around the stems becomes loosened and needs to be made firm again by treading, for the firmer the ground is made within moderation, the better will the plants succeed. Loose soil is detrimental and to be deprecated. Hoeing the soil between the rows on frequent occasions is a very important cultural detail; to rid the rows of weeds is at all times a matter of importance. A dry day should be chosen for hoeing as the weeds will shrivel and dry before their final removal.

When the seedling Cabbages are set out from the nursery bed they should be planted fifteen to eighteen inches apart in the rows which should be at least two feet asunder, the distance depending on the size of the particular Cabbage when mature. Use the hoe in dry weather and prick the ground over occasionally with a fork to prevent the surface becoming caked.

The great value of the Kale (or Borecole as it is frequently called) is its hardiness. The first sowing of this crop may be made any time in April; this, with a second sowing about the middle of May, will give sufficient plants for a succession.

Raise and treat these plants in the same manner as advised for Cabbages. A suitable distance between the plants is two feet in the rows and a space of about two-and-a-half feet between the latter. Plant firmly and give the seedlings water as required until they become rooted and established.

There is a great variety of Kales to choose from but the aim should be to select one or two that are at once hardy and of good flavour. Kale or Borecole will grow in almost any soil and situation but the plants thrive best in deeply-worked, firm ground. After exposure to frost the pickings are very tender and of good flavour, affording a welcome supply of vegetables when other greens are scarce. The seedlings may be planted out in the nursery-bed so late as August, admitting of spare ground being profitably utilised.

Couve Tronchuda, or Portugal Cabbage, is a useful member of the Cabbage tribe with which few people seem to be acquainted, yet it is a tender Cabbage and profitable to grow. The seeds should be sown in March or April in a cold frame, or out-of-doors in May. In either case, the seedlings should be large enough by the end of June to put out in well-manured soil, giving each as much room as possible—not less than three feet each way. Ample room is needed owing to the branching habit of the plants.

Portugal Cabbage is available between August and October, and is usually at its best condition by early September. The plants will not withstand much frost. This vegetable has a delicate flavour, peculiar to itself, and the large midribs should not be thrown away but used in much the same way as Seakale, which they much resemble in flavour. The actual leaves may be stripped off and cooked separately, as ordinary Cabbage. The Portugal Cabbage is a useful vegetable to follow the maincrop Peas.

Red Cabbages should be grown in every kitchen garden, for they are in great demand, both for pickling and cooking. Personally, I do not care much for boiled Red Cabbage, but many esteem it quite a novel delicacy. It is well worth trying.

Make two sowings of this Cabbage in small quantities only, one in April for the autumn crop, and another in August for winter use. Red Dutch Improved, Blood Red, and Miniature Red are good varieties.

Coleworts, or Collards, constitute another useful variety of Cabbage well worth growing. They occupy little space and are available at different seasons to other ordinary Cabbages.

There are two kinds—the green Rosette and the Hardy Green The sowing seasons are the same as for Cabbages generally. Spring-sown Rosette Coleworts come in very useful for cropping in November to December, and the Hardy Green, which withstands frost well, is most valuable in January and February.

Savoys may be had in season from September onwards by sowing suitable varieties, some of which, though sown at the same time, heart quicker than others. .Earliest of All is splendid for cutting in August and September, and Late Drumhead, which is ready during frosty weather, in, say, November and December, should both be sown at the same time in April to May.

Cottager's Kale, though extremely hardy, is not advocated by the present writer, as it requires a good deal of attention in staking and so forth, and takes up a lot of room which might more profitably be devoted to growing the smaller Cabbages and Kales. If sown in March to April it will not be ready for use until March to April in the following year. It thus occupies the ground for a long time which, in small gardens, might perhaps be more advantageously devoted to other crops.

Reverting to the question of seeds and varieties of Cabbage, etc., the following may serve as a guide :—The first sowing may be made on a warm border out-of-doors early in March, to turn in in July to August. For this purpose select All Seasons and Harvester Cabbages—to name but two of many similar varieties.

The second sowing (of the same or similar seeds) may be made in April, to turn in in September to October.

The third sowing, made early in July, will provide edible plants in February to March, and the seeds chosen should include such varieties as Flower of Spring, Ellam's Dwarf, Harvester, Daniels' Defiance and the indispensable All Seasons Cabbage, which I have found to be one of the most useful varieties for general purposes. Daniels' Defiance is, in my opinion, inclined to be too large for ordinary household purposes, and takes up too much room in the garden. This, however, is largely a matter of individual taste.

As to Kales, it has already been pointed out that there is a great variety of these. Victoria or Curly Kale sown in May will provide a supply of succulent greens in September to October. The Drumhead varieties, if sown in July, will be found the best for withstanding frosty weather, and thus furnishing a welcome change during February and March.

Asparagus Kale is one of the most useful of all. It matures very rapidly during the spring and summer, and comes on again quickly as a second crop early in March to April, as sprouts from the autumn-cut stumps, left in the ground all the winter for this purpose, The first edible part of this Asparagus Kale consists of the younger and tenderer outer green leaves. The next crop for use consists of the tender, Asparagus-like shoots which soon appear. By cutting these judiciously back to an eye, more and more fresh growths appear, a mixed crop of tender, if smaller leaves and shorter but still tender Asparagus-like shoots become abundant. So soon as the seeding properties of the plant outpace productivity of food supply, it is time to either throw the whole plant away or cut it hard back to come on again next year. Asparagus Kale seeds sown in July provide nice plants for the following spring, say, the end of March to May. Seeds sown in March provide serviceable plants in July and September. Seeds sown in June will provide excellent material for consumption in September to October.

The Brussels Sprout is a favourite vegetable of the autumn dinner table, but, unfortunately, the plants are not always grown so satisfactorily as they might be, owing to the failure on the part of the grower to plant the crop sufficiently early. Where possible, the seedlings should be raised in boxes, and, so soon as they develop their first leaves they should be pricked out in a nursery bed. The seeds should be sown in March, so that the plants may be ready for transplanting as early in April as possible. Late in May or early in June the plants should be ready for placing in their permanent quarters. The ground intended for them should be deeply-worked and well-manured. Insert the plants about two feet apart each way, either in rows or alternately. Weeds should be kept down by the frequent use of the hoe during hot weather, and, as growth advances, a little earth should be drawn up to the stems. As the plants approach maturity the lower and largest sprouts should be pulled first, leaving those under the crowns or tops a little longer. The tops themselves should be allowed to remain as long as possible to afford shelter to the oncoming Sprouts below. If the top of the plant is cut off too soon, this causes the sprouts to open and spoil. The tops eventually, when required, make a most delicious dish, one of the nicest of all.

March-sown Brussels Sprouts are ready for gathering in October to November; plants raised from seeds sown in April produce good sprouts in December and January; May-raised seedlings may be relied on to provide sprouts from February to March.

A few hints common to the culture of all these Brassicas may serve to conclude these notes. (1) Careful planting out in the final cropping ground; (2) constant attention in hoeing and aerating the ground by light forkings; (3) watching for and destroying slugs and other insect pests as they appear; (4) careful examination of the roots of all transplanted seedlings, to see that no plants infected with club-root are inserted; (5) moulding-up the rows about November, where necessary, not only as a protection from high winds, but to stimulate and encourage root growth; and (6) frequent firming of the ground about each individual plant, whether in the reserve border or the cropping ground. *E. A. Saunders.*

HOME CORRESPONDENCE.

[The Editors do not hold themselves responsible for the opinions expressed by correspondents.

Old-fashioned Border Carnations.—We are trying to get into contact with people who have or know where it is possible to obtain, plants of the hardy, old-fashioned border Carnations, which are seen in many gardens in villages and small towns. We believe that most of these Carnations were obtained in the first place from seeds. So far as we can trace, there are all sorts of colours; some varieties are, of course, worthless, but there are undoubtedly some of merit, and we are anxious to get in touch with gardeners or amateur gardeners from whom we can obtain specimen blooms, and then arrange to procure some for use in raising a race of cottage Carnations. *Allwood Bros., Wivelsfield Nurseries, Haywards Heath, Sussex.*

SOCIETIES.

NATIONAL ROSE.

July 2 and 3.—The summer exhibition of the National Rose Society, held on these dates, in the Royal Botanic Gardens, Regent's Park, was a great success. The weather was gloriously fine, but it was comfortable in the tents as a cool breeze tempered the effect of the hot sun. There seemed to be more visitors than ever, and certainly this Rose exhibition is one of the most successful horticultural functions held in the Metropolis. Nearly all the classes were well-filled and the exhibits generally were of a high standard.

There were plenty of new Roses, but only one was awarded the Society's Gold Medal, although five received Certificates of Merit. A gratifying feature of most of the new Roses was their pronounced fragrance.

Queen Mary was present early on the opening day and spent a long time inspecting the various exhibits.

AWARDS.

Gold Medal.

Lady Helen Maglona.—This is a fine crimson Rose, very richly coloured on the upper surface of the petals. This variety was awarded the Clay Cup in 1925 as being the best new fragrant Rose of that year. It is a variety of vigorous growth with a free, branching habit; the blooms are a good shape, full and of good average size. Shown by Messrs. Alex. Dickson and Sons, Ltd.

Certificates of Merit.

Billy Boy.—This variety appealed very much to us on account of its beautiful Buttercup yellow colour. The buds are very charming; the blooms, when open, are almost single, like a golden Irish Elegance, and in the centre the red filaments of the big ring of stamens give additional charm. The foliage is bright green and the stems reddish. Shown by Messrs. G. Beckwith and Son, Hoddesdon, Herts.

Lincoln Seedling.—A very pretty Rose of orange-scarlet colour with gold at the bases of the petals. Seen in the mass the colour is very pleasing. Shown by Messrs. G. Beckwith and Son.

Bedford Crimson.—This crimson Rose received the Clay Cup for fragrance in 1924. It is very free-blooming and makes a splendid garden Rose. The flowers are pleasing in all stages and possess very leathery petals. Shown by Messrs. Laxton Bros., Bedford.

Everest.—This is a Rose of the largest size: the petals are white with a very faint flush of yellow in the centre when open. The beautiful perfume of this Rose is not its least attraction. Shown by Messrs. W. Easlea and Sons, Eastwood, Essex.

Princess Elizabeth of Greece.—This H.T. variety is of vigorous growth, the stems being reddish and bearing handsome foliage. The blooms are deep orange, suffused with rose, and the edges of the petals roll back pleasingly, revealing a great deal of the deeper colour in the margin. The bloom is not quite long enough for an exhibition Rose, but for massing the variety will undoubtedly be an acquisition. Shown by Messrs. Chaplin Bros., Waltham Cross.

Other Novelties.

Amongst several other new Roses shown by Messrs. G. Beckwith and Son was a good H.T. pink variety named John Henry. The buds are very pretty and coloured rosy-scarlet, the petals assuming a rich pink when older. The flower, unfortunately, has a weak centre. This firm also showed Lady Love, a variety of soft pink colour with a suffusion of orange. It is a seedling of Ophelia. The stems are stiff and upright and bear vigorous leaves that point to a vigorous constitution. This Rose is very attractive when expanded. Ivy May is another H.T. variety of the Ophelia type, shown by this firm. The colour is rose pink with amber at the base of the petals; it is not very full. Golden Gleam is a yellow Rose tinged with rosy-red and streaked with scarlet. The buds are very pleasing and the flowering prolific. This is another of Messrs. Beckwith's novelties. Messrs. Dobbie and Co.'s Duchess of Atholl, which has received the Society's Certificate of Merit, is a variety of high merit. The colour is orange-buff suffused with rose. Most of the flowers shown had double centres. The stems are dark coloured, very vigorous and carry leathery foliage.

The H.T. Hon. Violet Douglas Pennant, shown by Messrs. Bees, Ltd., has a long bloom of shell-pink on a cream ground; the outer petals have very little of the pink colour, but have a sheen of gold at the base, so that the flowers when open have a glow of yellow. This firm's H.T. J. C. Thornton was too fully blown to judge of its merit. It is a rich scarlet, and in the bud stage would probably be very attractive.

Messrs. D. Prior and Sons' dwarf Polyantha Greta Poulsen is a floriferous variety with rose-pink blossoms which, when open, are as large as those of Tausendschon, and with white in the base. Another Polyantha variety shown by this firm named Jack Hobbs, is a rosy-scarlet variety, producing its blossoms in big clusters, both open flowers and buds.

Mr. G. A. Van Rossem had two novelties in Mdlle. Bep var Rossem, a canary-yellow H.T. variety, and Mrs. G. A. van Rossem, which, when open is "rosette" shape, revealing a deep orange-coloured centre and outer petals veined with deep rose. It is not fragrant.

Mr. Walter Stevens showed a Rose of the Ophelia type named Lady Sylvia, said to be a sport of Madame Butterfly. It is a splendid Rose but not greatly distinct from its near ancestors. Westfield Yellow, shown by Messrs. Henry Morse and Sons, is a nice shaped Rose and of rich colour, but the bloom is rather thin.

Messrs. McGredy and Son showed Eva Eakins, a pretty decorative Rose of the Pernetiana type, with carmine blooms flushed with orange and gold at the base; Sir David David, a H.T., glowing crimson variety, with very pronounced fragrance; and Mrs. Talbot O'Farrell, a Pernetiana hybrid with lemon petals heavily marked with cerise and crimson. The bud is of perfect shape and an ideal coat flower.

A bedding Rose, the colour of Paul's Scarlet Climber, was shown by Dr. P. A. Hendley, and named The Doctor. It is a seedling from Red Letter Day. The absence of perfume is a great defect in a Rose of this colour but the flowers are said to hang for a very long time on the plant and the colour is pleasing.

Mrs. Herbert Nash, one of Messrs. Chaplin Bros.' new Roses, is rich red, inclined to scarlet in the bud stage. The flowers are fragrant and the petals roll back from the pointed centres very prettily. Mr. Pemberton's Dorina Neave is a delightful shell-pink, the outer petals being very pale pink. Messrs. Alex. Dickson and Sons showed Dame Edith Helen, a beautiful pink Rose of fine shape, and Lady Mary Elizabeth, cerise-pink. The latter is fragrant and a beautiful Rose for massing or arranging in bowls for decoration indoors.

Many visitors were high in their praise for Mr. Sandy Dickson's Duchess of York, which was aptly described by one enthusiast as a "sunset" Rose. The under surface of the petal is gold, the upper suffused with rose, and these tones, with gold suffusion and orange in the centre produce a bizarre effect.

Nurserymen's Classes.

Following the recently established custom, the large representative groups of cut Roses were set out on separate tables, which measure ten feet by eight feet, along the middle of the principal tent. There were ten of these large collections and the general effect was admirable. There was a certain family likeness in the method of arrangement, but sufficient exhibitors had departed from the type to obviate a monotonous uniformity of treatment.

The Championship Trophy, Silver-gilt Medal, and first money prize were won by Messrs. Alex. Dickson and Sons with a bountiful collection of Roses displayed in pillars and intervening stands. Their principal varieties were Betty Uprichard, K. of K., Irish Elegance, Barbara Robinson, Francois Juranville, Mrs. Henry Morse, Sunstar and Maud Cuming. Mr. Elisha J. Hicks, who was second, had adopted a similar arrangement, and his pillars of Mabel Morse, Mrs. H. Stevens, Betty and Clovelly were very effective, while amongst the lower stands Lady Inchiquin, Mrs. Elisha Hicks and Chas. E. Shea made a good display. The third prize was won by Messrs. B. R. Cant and Sons with a graceful group in which the baskets of Roses set up on stands gave an individuality to the exhibit. In this class Messrs. Harkness and Co. also included baskets of good Roses in their group, and in this case the baskets were suspended.

In the class for a group of cut Roses arranged on tables measuring eight feet by six feet, there were six competitors, and of these the most uncommon in arrangement were shown by Mr. George Prince, Messrs. Morse Bros. and Mr. Walter Easlea, though the superior quality of the blooms in Mr. J. Mattock's collection won him the first prize. He had corner pillars of beautiful blooms of Mrs. Tresham Gilbey, Mabel Morse and Mrs. Oakley Fisher, while the masses of Red Letter Day, Golden Emblem and Betty Uprichard were very effective. Mr. George Prince was placed second with a delightfully arranged group in which he displayed Paul's Scarlet Climber, Lady Hillingdon, Mrs. H. Stevens, Silver Moon and Betty Uprichard amongst other good varieties. Messrs. T. English and Son, who were third, had good pillars of Mrs. Henry Bowles, Columbia and Independence Day.

The class for twenty-four varieties of Decorative Roses in vases was not so strongly contested as in former years, nor was the quality of the blooms quite so good. Messrs. A. Warner and Son were first, and their best vases were of Covent Garden, Lady Hillingdon, Mrs. H. Stevens and Red Star. In the second prize collection of the Lane's Nursery Co. the outstanding varieties were Lady Roundhay, Golden Emblem, K. of K., and Mrs. A. Tate.

The baskets of Roses were fewer than usual, but the general quality was very good. The first prize seven baskets of Decorative Roses, shown by Mr. John Mattock, were excellent, and included Louise Creiner, Benedict Sequin, Mrs. Henry Morse, Mabel Morse and Mrs. Henry Bowles. Messrs. Chaplin Bros. were second, and they had beautiful baskets of Betty, Mrs. Tresham Gilbey and Mrs. Henry Morse. Messrs. A. Warner and Son won the first prize in the class for three baskets with splendid examples of Hortulanus Buddé, Lady Roundhay and Marcia Stanhope. Mr. Henry Drew was a good second. The three baskets of Polyantha Roses was a good class, and here Messrs. Morse Bros. were first with very floriferous baskets of Alice Morse, Redhatte and Ellen Poulsen. Messrs. D. Prior and Son had a lovely basket of Else Poulsen in their second prize exhibit.

The exhibition Roses in baskets were also of very good quality. The best basket of any H.P. variety was of Candeur Lyonnaise, shown by Mr. G. Birch, while Snow Queen, shown by Messrs. D. Prior and Son, was second. Louise Creiner, shown by Mr. H. Mattock, was the best H.T. variety, and Nellie Parker, shown by Messrs. Jarman and Co., was second. A lovely basket of Madame Jules Gravereaux won the first prize for Messrs. D. Prior and Son in the class for any Tea or Noisette variety. In the class for a basket of Mrs. George Marriott, Messrs. Jarman and Co. were first, and Mr. H. Drew was second with excellent exhibits.

Amateur Classes.

The Champion Trophy in the Amateurs' Classes was offered for a group of cut blooms arranged on a space of six feet by four feet. Six competed, and the first prize was awarded to Dr. R. C. Turnbull, Colchester. The exhibit was rather formal in appearance, but the blooms were of glorious quality. He showed such sorts as Betty Uprichard, Padre, Ophelia, Independence Day and Lady Inchiquin. A basket of Isobel was very effective in the second prize exhibit shown by Mr. J. M. Hart, Potters Bar, who had excellent blooms of Madame

Edouard Herriot, Mrs. C. Lamplough, Madame Leon Pain, General MacArthur and others; third, Mr. G. Marriott, Carlton, Nottinghamshire.

In the class for a smaller group, in a space of four feet by four feet, Mr. H. R. Darlington, Potters Bar, had the better of two exhibits. He showed a number of fine Roses very effectively in baskets and vases, noteworthy varieties being Marcia Stanhope, Mélaine Soupert, Ethel James, a splendid exhibit of this pretty single Rose, Lemon Pillar and Purity. Mr. F. A. George, Worcester, was awarded the second prize.

The best basket of Roses of one variety was shown by Mr. C. C. Williamson, Canterbury, who showed Horace very effectively; the best basket of one or more varieties was exhibited by Mrs. E. P. Verming, Rickmansworth, who showed a fine basket of Etoile de Holland. In the class for a basket of one variety of a Rose shown by an amateur who employs no assistant, the first prize was won by Mr. V. E. Cribb, Northwood, with Mrs. Geo. Shawyer, and in the similar class for one or more varieties in a basket, Mr. E. H. Pleasance, Cambridge, excelled, with Mrs. Henry Morse. The second prize in this class was awarded to a pretty basket of golden Roses, viz., Golden Emblem, Florence Izzard and Mabel Morse.

The Mattock Cup offered for twelve varieties, distinct, was won by Mr. A. C. Turner, Woking, who had splendid blooms of such varieties as Souvenir de Cladius Pernet, General MacArthur, Betty Uprichard, Princess Mary and Los Angeles; second, Mr. H. R. Darlington, whose finest blooms were Madame Leon Pain, Golden Emblem and Independence Day.

The Holroyd Cup, offered for six distinct varieties, was awarded to Mr. T. E. Tattershall, Orpington. The varieties Lady Pirrie, Emma Wright, Isobel and Silver Moon were shown finely by this exhibitor.

An excellent competition resulted in the class for twenty-four blooms, distinct, in which the first prize included the Edward Mawley Challenge Cup. The successful exhibitor was Mr. F. H. Fieldgate, Colchester, who had clean bright flowers of Mrs. E. J. Hicks, Avoca, Mrs. Andrew Carnegie, Mrs. George Norwood, Mrs. Bertram J. Walker, Mrs. J. H. Welch, Mabel Drew and Lemon Pillar; Mr. R. C. Turnbull, Colchester, followed closely with splendid blooms of, amongst others Marcia Stanhope, Mildred Grant, Red Star and St. Helena.

The Lamplough Challenge Cup, offered for twelve blooms, distinct, was won by Mr. F. Trinder, whilst in the class for twelve blooms, distinct, open to growers of fewer than one thousand plants, the Rev. T. Giles Daubeney, Herne Vicarage, excelled with an exhibit of high merit. His bloom of Mrs. C. Lamplough was adjudged the best Rose shown by an amateur, and he had others of high merit in his specimens of Gladys Holland, Muriel Wilson, Nellie Parker and George Dickson.

No fewer than ten competed in the class for six blooms, distinct, open to growers of fewer than 250 plants. The first prize was the Ben Cant Memorial Prize of a piece of plate, which was won by Mr. G. A. Freestone, Folkestone.

Other prominent prize winners were Mr. C. W. Edwards, Carshalton, who secured the Elisha J. Hicks Challenge Cup for twelve blooms, distinct; Mr. F. A. George, Worcester, and Mr. A. N. Rogers.

Exhibition Roses.

The recent weather had been rather unfavourable for exhibition Roses, which under the influence of the great heat, following a cold period, had developed too quickly, consequently some of the blooms lacked substance, but through the skilful timing of the blooms the quality generally was fully as high as was to be expected. The championship class required forty-eight distinct blooms and in this the competition was good. The China Trophy, Silver-gilt Medal and first money prize was won by Messrs. F. Cant and Co. who set up a very interesting collection of good Roses which included characteristic blooms of Mrs. Henry Balfour, Mrs. John Laing, Admiration, Dean Hole, Mrs. Amy Hammond, Courage, Mrs. Henry Bowles, Frau Karl Druschki and Lord Allenby. In their second prize collection Messrs. D. Prior and Sons included excellent blooms of Bessie Chaplin, Ruth, Lady Inchiquin and Lord Allenby. Messrs. George Longley and Sons were third.

The John Hart Memorial Cup was won by Mr. Elisha J. Hicks, whose twenty-four varieties included well formed blooms of J. W. Hart, Earl Haig, Fragrance, Arthur Cook and Molly Sharman Crawford. The second prize in this well contested class was won by Mr. W. Slinger with good blooms of Mrs. C. Lamplough, Lemon Pillar, Gorgeous, Courtney Page and other valuable exhibition varieties.

Tea and Noisette Roses were rather larger than usual, but the fascinating tints of some of the varieties were not so evident as was the case last year. The first prize eighteen blooms, shown by Messrs. George Longley and Sons, included shapely blooms of Medea, Mrs. Foley Hobbs, Lady Plymouth and Molly Sharman Crawford. Mr. Henry Drew was a close second and he set up good specimens of Mrs. H. Stevens, Auguste Comte, Mrs. Foley Hobbs and Madame L. Constantine.

There were two classes for Roses of recent introduction and in these the blooms were distinctly of better quality than of recent years. The Kilbee Stuart Cup was won by Mr. George Prince, whose twelve varieties were of great merit and included Mabel Turner, Mabel Morse, William Kordes, F. J. Harrison and Lord Charlemont of considerable beauty. Mr. J. Mattock was second and he had lovely blooms of Admiration, Mabel Morse, Maud Cuning, Lord Allenby and Betty Hulton. The rich crimson variety Courage shown by Messrs. F. Cant and Co. won the first prize in the class for twelve blooms of one variety distributed since January 1, 1922, and Mr. Elisha J. Hicks was a good second with fine specimens of Lady Inchiquin.

The Wickerson Prize, offered for the best new Rose of British or American origin sent out between June 1, 1919, and December 21, 1924, was won by Messrs. Bees, Ltd., who showed the beautiful and fragrant variety Marcia Stanhope.

The "Best Bloom" in the Nurserymen's Section was Lady Plymouth, shown by Messrs. George Longley and Sons.

Artistic Classes.

The Dinner Tables, Vases, Bowls and Baskets of Roses arranged by lady members, filled a large tent and created the customary interest amongst the visitors. In the open classes the best dinner table decoration was arranged by Mrs. A. R. Bide, Farnham, who used the beautiful rich orange Angele Pernet Rose with purple foliage, Mrs. C. A. Tisdell, Woodford Green, was second with a table of Roselandia. Mrs Bide also had the best bowl of Roses which was filled with Madame Butterfly and foliage. Mrs. Tisdell was second with Premier, but was first with a handsome basket of Madame Butterfly, while Mrs. Bide was second with Roselandia.

In the Amateurs' Classes competition was greater. Mrs. Colstor Hale, Warminster, was first in the class for a dinner table decoration of single-flowered Roses where she successfully used Irish Fir-flame and Irish Elegance. Mrs. Oakley Fisher, Sudbury, who was second, associated Isobel with purple foliage. In the class for Roses other than single-flowered Mrs. A. Charlton was first with an attractive table of Madame Butterfly, and Mrs. Courtney Page was a good second with Roselandia. Mrs. Courtney Page won first prizes with an elegant basket of Madame Butterfly and with a graceful vase of Lady Sylvia.

TORQUAY AND DISTRICT GARDENERS'.

Favoured by fine weather two very interesting visits were paid by members of this Association to gardens in the district. The first of the season was a visit to Greenway Court, the residence of C. Williams, Esq., M.P., when about seventy members attended and were conducted round the garden by Mrs. Williams. The first specimen of note to be seen was a very fine Embothrium coccineum, about twenty-five feet high, of perfectly pyramidal shape, covered with flowers. The next was a very fine wall plant of Prostanthera rotundifolia. Numerous Grevilleas and Acacias were carrying a wealth of bloom, and a group of Dicksonia antarctica was also very imposing in a part of the wild garden. Hundreds of seedling Rhododendrons were thriving splendidly. A most enjoyable afternoon was spent here as the gardens overlook the beautiful River Dart.

The second visit was paid on the 19th to the grounds of Cockington Court, when, by the kind invitation of the president, J. H. Charlesworth, Esq., the members were entertained to a real Devonshire tea, and personally conducted through the grounds by the president. During the evening a beautiful Silver Challenge Cup was placed in the safe keeping of the president of the Society by Mr. R. W. Hodder, the energetic Hon. Secretary, the cup having been presented to the Society by P. C. M. Veitch, Esq., V.M.H., Exeter.

NATIONAL SWEET PEA.

The annual show of the National Sweet Pea Society, which was held at the Montpellier Gardens, Cheltenham Spa, on June 30 and July 1 last, on the invitation of the Cheltenham Chamber of Commerce, was one of the most successful held by that Society. The quality of the blooms was very high, and the competition in nearly all the classes was very gratifying.

From the spectacular point of view the chief feature of the show was the competition amongst trade growers for the Eastbourne and the City of Bath Challenge Cups. Last year both trophies were won by Messrs. Robert Bolton and Son, but in view of the difficulties of transporting the necessary quantity of flowers from Halstead to Cheltenham they did not compete for the Cups this year. But, following the precedent set by Messrs. R. Bolton and Son, both Cups this year were won by Messrs. Sutton and Sons with admirable collections.

In the Eastbourne Class, Messrs. Sutton and Sons had a magnificent group which was specially noteworthy for the intense colouring of such novelties as Magnet, Royal Scot, Charming and Coralline, though the stands of Avalanche, Powerscourt and George Shawyer were of very high quality. A Large Gold Medal was awarded to Messrs. Dobbie and Co. for an imposing display, which included such of their novelties as Gleneagles, Mrs. Caty and the even newer Belford, which is a beautiful creamy variety lightly flushed with pink at the base of the petals. Patience, Britannia, Picture, Wizard and Constance Hinton were also very beautiful in this fine collection. In a Gold Medal collection, Messrs. Ireland and Hitchcock had a new orange-coloured variety of great merit, and also showed Lady Keeble, of beautiful salmon-fawn colouring, and Mauve Prince. Matchless and Orion were also worthy of special mention in their graceful collection. A Silver Medal was awarded to Messrs. Carter and Co. for a large collection of standard varieties, including King Mauve, R. F. Felton, Charming, Hebe and Annie Bowness.

Competition was greater for the City of Bath Cup, and here the Sweet Peas must have been grown without any protection or shading. In their winning exhibit, Messrs. Sutton and Sons had magnificent stands of Hawlmark Pink, Coralline, Peggy, Magnet, Defiance, Matchless and Charming. Messrs. Dobbie and Co. were awarded a Large Gold Medal for a magnificent group, which must have run the winners closely. They showed, amongst other good varieties, Picture, Mary Pickford, Warrior, Elegance, Charming, Renown, Grenadier and the new white Camellia.

Gold Medals were awarded to Mr. J. Stevenson and to Messrs. E. W. King and Co. for their fine collections. The latter showed Jack Hobbs, a new cream-pink; Olympia, purple; Derby Day, mauve: Pimpernel, Gladys and Constance Hinton. The outstanding varieties staged by Mr. Stevenson were his varieties Coralline, Hebe, Ivory, Picture, Purple Perfection, Diana, Powerscourt and Wembley. Silver Medals were awarded to Mr. W. J. Unwin, Messrs. W. T. Payne and Son and to Messrs. E. Abbott and Sons.

The Monro Challenge Trophy, offered for the best twelve vases of Seeet Peas, in not fewer than six varieties raised or introduced by the exhibitor, was won by Mrssrs. **R. Bolton and Son** with a splendid collection which included Mammoth, Victor, Colorado, Model and R. F. Felton. Messrs. **E. W. King and Co.** were second, and their best varieties were Olympia, Rosy Morn, Gladys and Daventry. Mr. J. **Stevenson** had, in his third prize exhibit, good vases of Crimson Glow, La France and Grenadier.

Considerable interest was centred in the two classes for novelty Sweet Peas. The best three vases were of Colorado, Royal Mauve and Delight, shown by Messrs. **R. Bolton and Son**. Messrs. **T. Cullen and Sons** were second with Chieftain, Ruddigore and Patricia. The best one vase was shown by Mr. H. J. **Damerum**, who had magnificent spikes of the vivid salmon-cerise Mrs. A. Searles, which subsequently was adjudged the best novelty at the Society's Trials. Messrs. **Ireland and Hitchcock** were second with Lady Keeble, a beautiful salmon-fawn, and third wich Princess.

Mr. J. **Stevenson** won chief honours with six vases of varieties raised by the exhibitor; he showed Charming, White Lady and Hebe of great beauty. Messrs. **T. Cullen and Sons**, who were second, had Pink Perfection, Powerscourt and Champagne. Messrs. **E. W. King and Co.** were third.

Amateurs' Classes.

The Sutton Cup was won by Sir **Randolf Baker**, Bt. (gr. Mr. A. E. Usher), Ranston, Blandford, for the eighth successive year. His eighteen magnificent bunches included Wild Rose, Powerscourt, Annie Ireland, Purple Perfection and George Shawyer. Mrs. W. **Jarratt-Thorpe**, Hucclecote, Gloucester, was second, showing Warrior, Wizard, Ivory Picture and Valentine of great merit. Major **Lubbock** was third.

The *Daily Mail* Cup Class was probably the best in the show, and F. W. **Franks**, Esq. (gr. Mr. W. Humphrey), Loampits, Tonbridge, not only won the Cup, but also *The Gardeners' Chronicle* Medal, offered for the best amateur exhibit in the show, and his vase of Royal Pink was adjudged the best vase in the show. He also had excellent vases of Picture, Peggy, Wembley, Mammoth, Gold Crest, Hebe, Britannia and Constance Hinton. Mrs. W. **Jarratt-Thorpe** was second, and staged lovely vases of Charming, Annie Ireland, Wild Rose, Miss California and Mammoth. Gen. R. L. **Mullens**, C.B., Langham Oaks, Colchester, was third.

The Cory Cup always induces good competition, and this year was no exception to the rule. The first prize was won by Sir **Joseph Tichborne** (gr. Mr. C. Goodchild), Tichborne Park, Arlesford, with six splendid vases, of which Picture, Charming and Ivory Picture were perfect. Mrs. V. M. **Williamson**, Bramhope, Canterbury, was a good second.

The Stevenson Class requires twelve vases of British-raised varieties, and the first prize was won by Sir **Randolf Baker**, Bt., who included Coralline, Royal Purple, Fair Lady and Wild Rose. Sir R. **Baker** also won the Burpee Cup, offered for six varieties, of which at least three must be of American origin, and here he had excellent vases of Gold Crest, Miss Philadelphia, Crusader and Sky. Miss **Russell** (gr. Mr. C. H. Rundle), Barton Court, Canterbury, was second, and Messrs. **R. Bolton and Son** were third. Sir **Joseph Tichborne** won the S. W. King Cup with twelve fine varieties.

The colour classes were interesting and well contested. First prizes were won by the following:—F. W. **Franks**, Esq., with Constance Hinton (white), Hebe (pink), Centaur (cerise), and with Royalty (purple), in the class for any colour not named in the Schedule. Sir **Randolf Baker** was first with Powerscourt (lavender), Gold Crest (orange-scarlet), Sybil Henshaw (crimson), King Manoel (maroon), and Youth (Picotee-edged). Messrs. **R. Bolton and Son** with What Joy (cream), and Mrs. **Williamson** with Mrs. Tom Jones (blue).

In the County District Classes first prizes were won by Mr. F. **Churchward**, Newton Abbott, Devon, in the Western Class; F. W. **Franks**, Esq., in the Southern Class: H. J. **White**, Esq. in the Irish Class: J. H. **Emmett**, Esq., in the Northern Class, and Mr. J. **Randall** in the Midland Class.

The Hamilton Cup was won by F. J **Cashnella**, Esq., Bath, with twelve admirable vases of Sweet Peas, and Mr. F. J. **Rogers**, Yarmouth, Isle-of-Wight, won the Hawlmark Cup with six splendid vases, and also the *Amateur Gardening* Cup with nine equally meritorious vases. His chief varieties were Supreme, Royal Sovereign, Youth, Miss California, The Sultan and George Shawyer.

The Small Growers Cup was won by Mr. F. W. **Linington**, Isle-of-Wight, and the most successful Novice was Mr. N. S. **Stacey**, Ilfracombe, who won the first prize in the principal class of the section, and was also first in the open amateurs' classes for six vases and for a similar number restricted to those who grow their Sweet Peas without paid assistance.

Miss **Gwendoline Zelley**, of Winscombe, Somerset, another new exhibitor, won both first prizes for Dinner Table Decorations with very tasteful arrangements. Miss **Gladys Burt**, Coggeshall, had the best vase in the open classes, and Mrs. **Colston Hale**, Warminster, was similarly successful in the Amateurs' classes, while Mrs. H. A. **King**, Kempston, was first with a basket of Sweet Peas.

The new "President's Class," a decoration of a small table with Sweet Peas, was exceedingly successful, and the first prize was won by Miss **Russell** with an artistic table of mauve cream and orange coloured Sweet Peas in gilt baskets. Mr. J. **Stevenson** was second with a large bowl of Wild Rose Sweet Peas. Sir **Randolf Baker** won the first prize in the class for three vases of Sweet Peas, illustrating three distinct colour schemes, and Sir **Joseph Tichborne** was second. The Affiliated Societies Shield is held by the **Pangbourne and District Horticultural Society**, who were alone in the class, but staged twelve excellent vases of Sweet Peas.

The principal prize winners in the Cheltenham District Classes were Mrs. W. **Jarratt-Thorpe**, Mr. **Thomas Healey**, Mr. A. H. **Roberts**, Mr. J. H. **Bate** and Mr. **Harry Bate**.

ROYAL AGRICULTURAL.

The horticultural section in connection with the annual show of the Royal Agricultural Society, which was held in Caversham Park, Reading, from July 6 to July 9, was the most successful in the history of the Society. Unfortunately rain fell heavily on the day before the exhibition, and the approaches to the show were rendered almost impassable through the churning of the soft ground by the traffic of the exhibits. The authorities, however, did everything possible to remedy the unpleasant conditions by laying railway sleepers and breeze in the approaches, and when the King and Queen entered the weather was fine and the mud drying out.

All the competitive exhibits and nearly all the non-competitive groups were staged in two very large marquees. Two notable displays were made in the open, one by Messrs. **Sutton and Sons**, the other by the Horticultural Department of Reading University. Messrs. **Sutton's** exhibit comprised a "demonstration" garden which included a sports section, vegetable and flower gardens and an exhibit of farm crops.

The flower garden was very pretty, and in it were growing splendid Begonias, Sweet Peas, Salpiglossis, Clerodendron fallax and a variety of flowers raised from seeds. The feature of the vegetable garden was a grand row of V.C. Peas. The garden arranged by Reading University included fruit trees showing methods of pruning and training, beds of Dahlias demonstrating the evolution of the flower from the show type (1830) Pompon, (1850) and so on to the present forms of the flower. They also exhibited a new white Phlox named The Dean, a new Pelargonium of orange colour with a coral shade and many other interesting subjects.

In the tent Messrs. **Sutton and Sons** showed a gorgeous exhibit of some 300 bowls of Sweet Peas in sixty varieties. Messrs. **Dobbie and Co.** also had a splendid exhibit of these flowers and Messrs. **Jas. Carter and Co.** had a most decorative exhibit in which richly coloured Begonias, Gloxinias, Petunias, and other flowers were arranged to the fullest advantage.

Competitive Classes.

The important class for a group of miscellaneous plants in and out of bloom attracted two exhibitors, Messrs. **J. Cypher and Sons**, Cheltenham, and Mr. H. **Holmes**, Chesterfield, the first and second prizes being awarded in the order of their names. Messrs. **Cypher's** magnificent exhibit was immediately opposite the entrance and worthily upheld this firm's high reputation as exhibitors of choice exotic plants. The group was dominated by a fine Kentia Palm and it was bright with rich colours of Laelio-Cattleyas, Hippeastrums, Lilies, Crassulas, Odontoglossum and other flowering plants, intermixed with choice Caladiums, Codiaeums, Nandina domestica, Dracaenas, Selaginellas, Ferns and other showy foliage plants. Mr. **Holmes** staged his group very effectively, and it included such flowering plants as Clerodendrons, Ixoras, Lilies, Francoa ramosa and Orchids, with a wealth of foliage plants.

The only exhibit of Orchids, arranged on a space of one hundred square feet, was shown by Messrs. **Stuart Low and Co.** Banks of Miltonias, including fine specimens of M. Charlesworthii, were a feature of this exhibit, which contained well grown plants of Cattleya Dupreana, Laelio-Cattleya Teucra, Odontoglossum Tityus, Cattleya Lavinia, C. Mossiae Wagneri and others.

Messrs. **Blackmore and Langdon** had the field to themselves in the class for a group of tuberous-rooted Begonias occupying a space of one hundred and fifty square feet. These Begonias were of marvellous quality and there was nothing finer in the show. The size of bloom, range of colour, and magnificent quality of the plants are deserving of the highest praise. Not the least beautiful feature of the group were stands carrying baskets of such sorts as Eunice, Gladys, Mollie and Lettie. Of the larger varieties notable sorts were Lord Lambourne, Mrs. F. C. Calthorp, Mrs. J. S. Brunton, Albatross, J. W. Pymen, Peace, and Mrs. Hugh Montcrieff.

This firm also excelled in the class for Delphiniums, in which the only other competitor Mr. T. **Carlisle**, Twyford, was second. Messrs. **Blackmore and Langdon's** collection was of the highest quality and included such fine varieties as Countess Cowley, Blue Queen, Sir Douglas Haig, Mrs. Townley Parker and Blue Boy.

The class for a collection of hardy perennial plants and cut blooms attracted three exhibitors and the prizes were awarded as follow:—First—Messrs. **Maurice Prichard and Sons**, Christchurch; second, Messrs. **W. Artindale and Sons**, Sheffield; third, Messrs. **Harkness and Sons**, Bedale. The premier collection was an ideal exhibit of border flowers, for each subject showed prominently and the quality was splendid. Notable subjects were Kniphofia Glowing Torch, Poterium obtusum, Lilium pardalinum, L. testaceum, Oriental Poppy Jeannie Mawson and Thalictrum rugosum. Messrs. **Artindale and Sons** followed closely. They had a wealth of fine border plants of which Eremurus Sir A. Hazelrigg, Allium giganteum, Oriental Poppy Colonel Bowles, Gladiolus Souvenir, butter-yellow, Allium giganteum and choice Delphiniums are a selection.

The interesting class for a border of growing hardy perennial flowers was not so good, but the greater difficulty of the exhibitors in arrangement is obvious. The first prize was awarded to Mr. **Thos. Carlisle**, Twyford, and the second to Messrs. **W. Artindale and Son**.

The four collections of Roses in the class for a group occupying a space of twenty feet by five feet were all of outstanding merit, resulting in a keen competition. The first prize was awarded to Messrs. **Waterer, Sons and Crisp, Ltd.**, Twyford, whose arch of Golden Emblem in the foreground was a fine feature, as were corner pillars of Betty Uprichard and Los Angeles. The Queen Alexandra Rose showed to advantage at the base of the golden arch. In the background were superb baskets of Mabel Morse, Margaret Dickson Hamill and Covent Garden.

The second prize was awarded to Mr. **Elisha J. Hicks**, who had Pride of Hurst, their new salmon Polyantha: Mabel Morse, Angele Pernet, and Lady Inchiquin, especially good; third, Mr. **T. Robinson**, Nottingham.

The first prize for border Carnations in a space of fifteen feet by five feet was won by Mr. **H. Lakeman**, who had the better of two exhibits, beating his competitor, Mr. J. R. **Crowhurst**, Burgess Hill, who was placed second, easily.

Two competed in a class for Perpetual-flowering Carnations in which Messrs. C. **Engelmann Ltd.**, excelled. This firm showed in their usual fine style, staging splendid blooms, amongst which we noticed the new Palette, a variety of bizarre colouring, cream ground with apricot and cerise markings; Laddie, Zorro a new variety of pale heliotrope suffused with cerise, Dorcas, a scented crimson variety, and Sheila Greer. Second, Messrs. **Stuart Low and Co.**

The class for a collection of Sweet Peas on a space twenty feet by five feet was one of the brightest of all. The general effect was superb. The premier award was won by Messrs. **Robert Bolton and Son**, Halstead, Essex. This firm arranged large posies of these flowers with just a touch of Asparagus plumosa as greenery. Notable vases were those of R. F. Felton, Gold Crest, Mammoth, Colorado, What Joy, creamy yellow; Hebe and Royal Mauve. Second, Mr. J. **Stevenson**, Wimborne; third, Messrs. E. W. **King and Co.**, Coggeshall.

AWARDS TO NON-COMPETITIVE EXHIBITS.

Large Gold Medals to Messrs. **Allwood Bros.** for perpetual-flowering Carnations, border Carnations and Dianthus Allwoodii: Messrs. **Alexander Dickson and Sons**, for Roses; Messrs. **Sutton and Sons**, for Sweet Peas; **Kings Acre Nurseries, Ltd.**, for fruit trees in pots; Messrs. **Waterer, Sons and Crisp, Ltd.**, for fruit trees in pots: and Messrs. **Wilson and Agar**, for a rockery and water garden.

Gold Medals to Messrs. **L. R. Russell, Ltd.**, for stove and greenhouse plants; Mr. **H. Lakeman**, for Carnations; Messrs. **Laxton Bros.** for Rose Bedford Crimson, Strawberries and Red Currant No. 1; Messrs. **J. Peed and Son**, for Caladiums and indoor flowering plants; Messrs. **Waterer, Sons and Crisp, Ltd.**, for herbaceous flowers, water garden and trees and shrubs; **Studley College**, for indoor grown fruits; Messrs. **J. Carter and Co.**, for greenhouse flowers; Messrs. **R. B. Cant and Sons**, for Roses; Messrs. **Dobbie and Co.**, for Sweet Peas; Messrs **J. Forbes, Ltd.**, for hardy flowers; Messrs. **Toogood and Son**, for hardy flowers, and Messrs. **R. Wallace and Co.** for a water garden and hardy flowers.

Silver-Gilt Medals to Messrs. **Jarman and Co.** for Scabious, Roses and Gladioli; Messrs. **Daniels Bros.**, for Sweet Peas, Roses and Delphiniums; Messrs. **Maxwell and Beale**, for Alpines and a rock garden; Mr. **J. H. Pemberton**, for Roses; **Chalkhill Nurseries**, for hardy flowers; Messrs. **Hillier and Sons**, for Water Lilies and miscellaneous foliage and flowering plants; and Messrs. **R. H. Bath, Ltd.**, for hardy flowers.

Silver Medals to **Swanley Horticultural College**, for fruits, preserves and vegetables; Messrs. **Gibson and Son**, for hardy herbaceous flowers; Messrs. **Isaac House and Son**, for Scabious; Messrs. **Godfrey and Son**, for Pelargoniums and other flowering plants; Messrs. **Bakers, Ltd**, for border flowers; and **Forest Orchard Nurseries, Ltd.**, for fruit trees and ornamental shrubs.

SCHEDULES RECEIVED.

Charfield Fete and Flower Show.—Exhibition to be held on Saturday, August 21st. Secretary, Mr. S. Benson, The Nurseries, Charfield.

Kingston, Surbiton, The Dittons and District, Chrysanthemum Society.—Nineteenth annual exhibition, to be held in the Assembly Rooms, Surbiton, on Wednesday, November 3.—Secretary, Mr. W. H. Divers, Westdean, Hook, near Surbiton.

MARKETS.

COVENT GARDEN, Tuesday, July 6, 1926.

Plants in Pots, etc.: Average Wholesale Prices.

(All 48's except where otherwise stated).

	s. d. s. d.
Adiantum cuneatum per doz. ...	10 0-12 0
—elegans ...	12 0-15 0
Aralia Sieboldii	9 0-10 0
Araucarias, per doz.	30 0-42 0
Asparagus plumosus	12 0-18 0
—Sprengeri ...	12 0-18 0
Aspidistra, green	36 0-60 0
Asplenium, per doz.	12 0-18 0
—32's	24 0-30 0
—nidus	12 0-15 0
Cacti, per tray —12's, 15's ...	5 0—7 0
Crassulas, 48's, per doz. ...	24 0-30 0
Crotons, per doz.	30 0-45 0
Cyrtomium ...	10 0 25 0
Erica coccinea, 48's per doz.	24 0-30 0
—Cavendishii, 48's, per doz. ...	30 0-36 0
Fuchsias, 48's per doz. ...	12 0-18 0
Heliotrope, 48's, per doz. ...	12 0-15 0
Hydrangeas, pink, 48's, per doz.	24 0-30 0
—white, 48's per doz.	24 0-27 0
—blue, 48's, per doz.	24 0-36 0
Ivy Geranium, 48's, per doz.	15 0-18 0
—60's per doz. ...	9 0-12 0
Lilium longiflorum (Harrissii) 48's, 32's, per doz.	21 0-30 0
Marguerites, 48's per doz. ...	18 0-21 0
Nephrolepsis in variety ...	12 0-18 0
—32's	24 0-36 0
Palms, Kentia	30 0-48 0
—60's	15 0-18 0
Pteris, in variety	10 0-15 0
—large, 60's ...	5 0—6 0
—small	4 0—5 0
—72's, per tray of 15's	2 6--3 0
Rhodanthe, 48's, per doz. ...	12 0-15 0
Roses, Polyantha 48's, per. doz.	24 0-30 0
—Rambler, various sizes each	7 6 25 0
Stocks, white and coloured 48's per doz.	15 0-18 0
Verbena Miss Willmott, 48's, per doz. ...	18 0-21 0

Remarks.—Owing to increased supplies and a smaller demand prices generally have been on the down grade. Carnations have increased considerably and prices are lower now than for some time past: the varieties recommended are: Aviator, Cerise Cupid, Delight, Daydream, Enid, Laddie, Lady Northcliffe, Iver Pearl, Mikado, Mrs. Hemus, Wiversfield Pink, White Perfection, Sunstar, Our Prince, Topsy and Faith Dutton. Roses fluctuate in price according to quality; pink varieties are the most plentiful, but good reds are scarce; the leading varieties are: Columbia, Golden Ophelia, Madame Butterfly Madame Abel Chatenay, Molly S. Crawford, Ophelia, Sunburst, Mrs. Ward, Roselandia, Sylvia and Mrs. Stevens. Amongst out-door blooms Achillea The Pearl is the newest arrival. Alstroemerias are increasing in quantity and Gypsophila elegans is arriving in good condition Sweet Sultans are now obtainable in the three colours, viz., white, mauve and yellow. Scabiosa caucasica is much improved in quality. The supplies of Cornflowers, like those of many other out-door blooms, have exceeded the demand, while Sweet Peas were in excess of requirements during Friday and Saturday last. Amongst Gladioli, The Bride (white) has been most plentiful; coloured varieties are shorter at the present time, as also are the giant varieties, although some very fine spikes of Giant White, Scarlet Orange and Pink have been on sale in limited quantities. Primulinus varieties appear to be finishing. White Pinks are practically over for this season but there is an ample supply of double white Stock. Numerous enquiries have been made for white Asters, but at present only a few blooms have been received.

Vegetables: Average Wholesale Prices.

	s. d. s. d.
Beans—	
—Guernsey and Worthing forced	1 3--2 0
Beets, per cwt.	7 6--9 0
Cabbage, per doz.	1 6--2 0
Carrots, new, per doz. bundles	4 0--8 0
Cauliflowers, per doz.	3 0--5 0
Cucumbers, per doz.	2 6--4 6
—Flats	8 0-12 0
Horseradish, per bundle ...	1 6--2 0
Lettuce, round, per doz. ...	0 9--1 6
Marrows, forced per doz. ...	8 0-10 0
—Outdoor... ...	3 0—4 0
Mint	1 6--2 0
Mushrooms,	
—cups ...	2 0--2 6
—Broilers ...	1 0--2 0
Onions—	
—Egyptian ...	— 12 0
Parsnips, per cwt.	5 0--6 0
Peas, English per bushel. ...	8 0-10 0
Potatos—	
—King Edward per cwt. ...	6 0--6 6
—others	4 0--5 0
New Potatos—	
—St. Malo ...	7 6--8 6
—Azores, per case	4 0--6 0
Spinach, per bushel	3 0--4 0
Spring Greens, per bag ...	2 0--3 0
Tomatos—	
—English, pink,	7 0—8 0
—pink and white	7 0—8 0
—blue	5 6—6 6
—white	5 6--6 6
—Guernsey ...	— 7 0
Turnips, per cwt.	5 0--7 0
—new, per doz. bunches ...	6 0-10 0
Turnip Tops, per bag ...	3 6--4 0

Remarks.—A better enquiry has been noticeable all round, the finer weather no doubt helping the improvement. Australasian Apples are moving a shade more freely. Excepting for Strawberries, choice fruits are not meeting a very keen demand, hot-house Grapes, Peaches, Nectarines and Figs feeling the competition of the first-named fruit. Melons are wanted and selling at comparatively high prices. English Cherries are, on the whole, disappointing. Parcels of sound, dry fruit are scarce and dear, the bulk of supplies being damp and difficult to sell at satisfactory prices. Black Currants increase almost daily in supply, but sell readily, although at slightly easier prices. Cooking Gooseberries are in poor demand and show little signs of improving from the point of view of price. Some fine dessert varieties, however, are now being marketed and sell fairly well. Red Currants have not been a good business, but at the time of writing are a slightly better trade. A sprinkling of Asparagus continues to arrive and sells at good prices. French Beans are still selling well and remain at a high figure. Tomatos are in heavy supply but values are a shade firmer. Cucumbers of best quality are also an improving business. Mushrooms show considerable variation in condition and quality, which accounts for the wide range of values. Salads are plentiful, Lettuces being particularly cheap. Cauliflowers are in good demand at satisfactory prices. Green vegetables meet a moderate demand. English new Potatos are selling well.

GLASGOW.

Business in the fruit market during the past week was concentrated in a few popular lines. The warm weather stimulated the demand for Tomatos, but as the supplies of both home and foreign products continue on an increasingly large scale prices continue to fall. Scotch-grown Tomatos ranged from 8d. to 10d. per lb., and a few special grades made 1/-. English Tomatos realised 8d. and Guernsey 7d. Strawberries were plentiful and of mixed qualities. Scotch table fruit was worth from 9d. to 1/- per lb.; jam berries, 4½d.; and English produce, 5d. to 1/-. The market was overstocked with Gooseberries which commanded 2d. per lb, while English Black Currants ranged from 1/- to 1/4, and Raspberries averaged 9d. Extra good Cherries sold at 14/- per half-sieve. Highest quality Valencia Oranges of 300 and 240 counts continued cheap at 8/- to 14/- per case, with cheaper brands at 6/- to 8/-. Apples were slow to move even at bargain prices. First-class Tasmanian Apples could be purchased at 6/- per case, and Australian Clio at 4/6. Jonathan and Delicious fluctuated between 8/- and 12/-.

The cut flower department continued quiet and steady at the low level of prices recorded in the previous week. Irises, small bunches, sold at 2d. to 4d.; large, at 4d. to 8d. Sweet Peas, small, realised 5d. to 7d.; large, 7d. to 10d. Roses fetched 2/- to 4/- per dozen, and 5d. to 10d. for 6's. Carnations were worth 2/- to 4/-; Lilium longiflorum (Harrissii) was worth 4/- per bunch; Marguerites, 1d. to 2d.; Stocks, 4d. to 8d.; Morning Star, 2d. to 4d.; Gypsophila, small, 2d. to 4d., large, 5d. and 6d.; and Asparagus Fern, 6d. to 1/-.

A moderate turnover was reported in vegetables, but the prices of Lettuces, Cucumbers, Cauliflowers, etc., were the same as those of the previous week.

ANSWERS TO CORRESPONDENTS.

Names of Plants.—*E. K.* Homeria collina from South Africa; a half or three-parts-grown flower and a whole leaf should be sent with Iridaceous plants. *J. B. P.* 1, Heuchera sanguinea; 2, H. sanguinea variety; 3, H. micrantha; 4, Dianthus deltoides; 5, Verbascum phoeniceum; 6, Thalictrum aquilegifolium; 7, Campanula latiloba; 8, Iris flavescens; 9 and 10, Lupinus polyphyllus varieties. *J. H.* Primula Edina (P. Bulleyana × P. Beesiana). *J. O.* 1, Lychnis coronaria; 2, (Herb) probably Achillea Ptarmica; send when in flower.

Peach Blister.—*G. A. G.* Your Peach leaves are affected with the fungus Exoascus deformans. The disease is always most in evidence when there is a sudden fall in temperature, and especially when cold winds prevail, but it is checked by an increase of temperature. The affected leaves should be removed and burnt. Spraying the trees with Burgundy mixture just before the leaf buds burst is a preventive measure that has proved eminently satisfactory; the mixture is rendered more effective if three-quarters of a pint of milk is added to every three gallons, as this addition increases its adhesiveness.

Tomato Black Rot.—*H. A. L.* The Tomatos are affected by the fungus known as Black Rot. It is believed that the fungus, being a wound parasite, gains an entrance to the fruit through minute cracks or punctures in the skin. Extremes with respect to watering and the use of green manure, or anything that is likely to cause the fruits to crack, should be guarded against. All fruits showing any signs of the disease should be removed and burnt, and the plants sprayed occasionally with potassium sulphide, especially when they are setting their fruits. All the ventilators in the house should be opened on every favourable occasion: be careful to guard against too much moisture in the atmosphere.

Communications Received.—W. F. B.—G. R.—T. S. M. W.—T. O.—G. B. N.—W. L.—G. D. B.—F. N. W. H. H. L,

THE

Gardeners' Chronicle

No. 2064.—SATURDAY, JULY 17, 1926.

CONTENTS.

Alpine garden—
  Cytisus Ardoinii ... 46
  Gypsophilas for the rockery 46
  Papaver triniaefolium 46
  Parochetus communis 46
Apiary notes 52
Barberry, a new ... 42
Bulb garden—
  Brodiaea hyacinthina lactea 46
Carnations, new Perpetual-flowering ... 47
Corry, Mr. W. L. ... 42
Drainage and mining around Doncaster... 42
Fruit garden—
  Summer-pruning ... 55
"Gardeners' Chronicle" seventy - five years ago 43
Garden notes from south-west Scotland 50
"Gartenflora" ... 42
Gladiolus show, forthcoming 42
Grapes, the scalding of 55
Hardy flower border—
  Sowing seeds of hardy plants ... 46
  Spiraea Aruncus ... 46
Indoor plants—
  Celsia arcturus ... 48
  Salpiglossis ... 48
  Salvia splendens ... 48
Market fruit garden ... 53
Millwater 50
Oak, the "Doodle"... 43
Orchid hybrids ... 47
Orchid notes and gleanings—
  Evergreen Disas ... 47
Parks and gardens, public 56
Plants, the nervous mechanism of ... 41
Potato, intervarietal differences in the ... 54
Rous Lench Court, sale of 41
Societies—
  Guildford and District Hort. ... 60
  Mosspark Horticultural 56
  National Carnation and Picotee ... 59
  Reading Gardeners' 56
  Royal Horticultural 57
  Société d'Horticulture, Région du Nord 56
  Wolverhampton Floral Fete ... 58
Sweet Pea trials ... 49
Traveller's observations, a 51
Trees and shrubs—
  Genista radiata ... 47
  Notospartium Carmichaeliae ... 47
Trespass by animals... 52
Volcanos, flora on ... 42
Week's Work, the ... 44

ILLUSTRATIONS.

Corry, Mr. W. L., portrait of 42
Little Wonder Hedge Clipper 60
Millwater, Ockham, Surrey, views in the gardens at 48, 49, 50, 51
Potato leaves, types of 54, 55
Roses: Billy Boy, 45; Lady Helen Maglona... ... 43

SUPPLEMENTARY ILLUSTRATION.

Garden Steps at Millwater, Ockham.

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last fifty years at Greenwich 63°.

ACTUAL TEMPERATURE—
The Gardeners' Chronicle Office, 5, Tavistock Street, Covent Garden, London, Wednesday, July 14, 10a.m. Bar. 30.2. Temp. 78°. Weather, Bright sunshine.

The Nervous Mechanism of Plants.

SIR JAGADIS C. BOSE has won distinction in the field of plant physiology by his elegant researches into the responses which plants make to various kinds of stimulation. In order to conduct these researches, Sir J. C. Bose has devised many different kinds of recording apparatus which are of almost magical potency in recording even the slightest response which plants make when subjected to change of environment. Even those who are not able to accept all the conclusions which Sir J. C. Bose draws from his experiments can admire unreservedly the meticulous accuracy of method which he employs. For this alone, whether or no his conclusions stand the test of time, Sir Jagadis will always hold a high and honoured place among plant physiologists. Lord Kelvin once propounded the hard, but profoundly true aphorism "science is measurement." Watching the records which Sir J. C. Bose has constrained the plants themselves to write, the admiring witness may well be tempted to amplify it by adding and "minute measurements are magic." Thus by a new and beautiful device which Sir J. C. Bose described in the course of his recent lecture before the Royal Horticultural Society he is able to determine plant responses at intervals of 1/200 of a second. Witnessing these meticulous plant autographs the imaginative spectator finds a new meaning to the old verse:—

> The moving Finger writes; and having writ,
> Moves on; nor all your Piety nor Wit
> Shall lure it back to cancel half a Line,
> Nor all your tears wash out a Word of it.

As a result of his investigations Sir J. C. Bose finds that the Sensitive Plant, Mimosa pudica, responds to stimulation in so short a space of time as one second and believes that it is possible to demonstrate the existence in this and other plants of nervous tissue comparable to that possessed by animals. Such claims have been made before, but although no one conversant with plant physiology will dispute the veiw that plants and animals are fundamentally alike in their powers of response to stimulation, anatomists will, we think, require a good deal of convincing before they accept the veiw that nervous tissue at all comparable with that of animals is to be found in plants. The Sensitive Plant occupies just now a most interesting position in physiological science. It has been shown by the Italian physiologist Ricca that the leaves of Mimosa perform their characteristic movements when a stimulus is applied to the lower part of the stem after that part has been completely severed from the upper leaf-bearing part and joined again with it by means of rubber and glass tubes filled with water. From this remarkable result Ricca draws the conclusion that when the stem is stimulated, as for example. by cutting the wood, a specific chemical substance is produced which travels up the wood in the water current (transpiration current) and reaching each leaf in turn acts as a stimulus which brings about the falling of the leaf stalk and the closing of the leaflets. Bose, on the other hand, has not been able to confirm this now classical experiment, albeit that other physiologists have obtained results similar to those of Ricca. However, even though Ricca's experiments be accepted, as we think they must be, they do not solve the whole problem of mode of response to stimulus as exhibited by Mimosa pudica. For, as another observer, Snow, has shown, leaf movement over a limited area may also be brought about by means of a cut which extends only to the bast and leaves the wood intact. This movement though limited in range occurs with such great rapidity as to rule the water transport of a chemical stimulator out of court. There is, therefore, room here for plant "nerves," though whether subsequently research will finally establish the existence of such structures or will discover another significance in this rapid response must, in the mean time, remain uncertain. Prof. Bose's enthusiasm and devotion to research have led him to establish a Plant Physiology Institute at Calcutta, with branches at Darjeeling and elsewhere. Through his Institute and through his own researches Sir Jagadis is exerting a great influence in the East as well as in the West, and all concerned with the advancement of knowledge will hope that the appeal which is now being made to the Government of India to increase the measure of assistance which it is giving to the Institute will meet with a generous response. If so, the aspiration which fires Sir Jagadis of attracting workers both from the West and from the East to pursue experimental research in the laboratories of the Bose Institute, may be fulfilled in such full measure as to bring abiding satisfaction to a man who has given his life and his means to the promotion and endowment of research.

The Hardy Fruit Crops.—We are indebted to those readers who have returned their copies of the statistical tables on the fruit crops and would remind those who have still to return theirs that it would make our work easier if they are sent forthwith. Those who have failed to receive one of the forms owing to change of address, and any other reader who wishes to contribute to the report are asked to make immediate application for one of the forms.

Snell Memorial Medal.—The Council of the National Institute of Agricultural Botany has awarded the Snell Memorial Medal for the year 1925 to Redcliffe N. Salaman, J.P., M.D., M.A. The medal is given annually to mark distinguished work in the sphere of Potato husbandry, and it has been awarded to Dr. Salaman in recognition of his eminent services in the study of the problems connected with the breeding and the diseases of Potatos. The medal will be presented to Dr. Salaman at the public inspection of the trials at the Potato Testing Station, Ormskirk, on August 19. Dr. Salaman's principal work has been in the direction of the genetical analysis of the characters of the Potato, and he has paid particular attention to studies of yield and of resistance to virus diseases. He is also widely known as the chairman for the past seven years of the Potato Synonym Committee, which under his leadership has achieved results of great value to Potato growers by introducing order into the nomenclature of Potatos and discouraging the practice of putting old varieties on the market under new names.

Gardening and Afforestation at Delhi.—In a paper read by Mr. Herbert Baker, A.R.A., F.R.I.B.A., before the Society of Arts, on the subject of the New Delhi, the lecturer remarked, *inter alia*, that the success of Delhi as a pleasant and beautiful city would largely depend upon the full and clean maintenance of its avenues, lawns, gardens, and fountains, both in the new city and in the surrounding circle of older Delhis, and for the afforestation of the Ridge, which would be necessary to temper the prevailing summer winds. If this duty were liberally accepted and performed, the capital of India might become a garden city and the pride of the country.

Rous Lench Court.—This beautiful old estate in Worcestershire, near Evesham and Pershore, which was sold at the end of May, is again in the market, and is to be offered at Evesham on July 26. The estate comprises nearly a thousand acres, with pleasure grounds of 182 acres, and include some remarkable clipped Yew hedges and other examples of topiary work.

Preservation of Trade Catalogues.—For a number of years the U.S. Department of Agriculture has been making a collection of catalogues of firms engaged in the nursery and seed industries, which is filed as a permanent feature of the Departmental Library. These publications are of signal service in the investigations of the Bureau of Plant Industry concerning the history, nomenclature, description and distribution of fruits, vegetables, etc. The older catalogues are, however, difficult to find. Such literature is usually considered ephemeral, and when out of date for reference is thrown into the waste-paper basket. Yet the provenance of a plant as recorded in a seed catalogue is often a fact of great value, to be readily found nowhere else, and of cardinal importance in tracing hybrid origins. The catalogues of the larger nursery firms have more than a mere commercial interest; it is to them that the scientific man of the future will turn for information of the greatest value. The collection in the library of the U.S. Department of Agriculture numbers more than 26,000. Some of the catalogues go back to the eighteenth century A collection of seed and plant catalogues comprising both old and new might well find a place in some of our horticultural libraries, such as the Lindley Library of the Royal Horticultural Society. The high value placed upon catalogues of the eighteenth century to-day can be taken as in some degree a measure of the appreciation with which such a collection would be regarded by the historian two hundred years hence.

Drainage and Mining around Doncaster.—The Minister of Agriculture announces that, whereas it has been resolved by both Houses of Parliament that it is expedient that a tribunal be established for enquiring into a matter of urgent public importance, that is to say, into the conditions in regard to mining and drainage in an area around the Borough of Doncaster, the Right Honourable Sir William Joynson-Hicks, Baronet, one of His Majesty's principal Secretaries of State, has, at the Minister's request, appointed: Sir H. C. Monro, K.C.B., late Permanent Secretary of the Local Government Board (Chairman); Mr. W. J. Board, O.B.E., Town Clerk of Nottingham (representing the Ministry of Health); Mr. I. Burns (representing the Miners' Federation); Mr. R. Clive (representing the Mining Association); Sir W. H. Ellis, G.B.E., D.Eng., President of and representing the Institution of Civil Engineers; Major F. H. Fawkes, J.P., Chairman of the West Riding Agricultural Committee, and representing the Ministry of Agriculture and Fisheries; Mr. T. S. Hawkins, M.B.E., M.Inst.C.E. (representing the Ministry of Transport); and Mr. A. R. Thomlinson, M.I.Min.E. (representing the Mineral Owners' Association), to be a Commission to enquire into what is known as the Doncaster Area, with regard to (1) The effect of the working of minerals on the existing system of land drainage; (2) The efficiency of the existing system of land drainage, quite apart from the effect thereon of the working of minerals; (3) The best method of reconciling and co-ordinating such interests as mineral working, agriculture, building, inland navigation and transport generally, etc., in the development of the area; and (4) any related matter; and to make recommendations on them. The Commission will have at its disposal the services of Mr. W. J. E. Binnie, M.A., M.Inst.C.E., F.G.S., and Dr. H. Lapworth, D.Sc., M.Inst.C.E., M.Cons.E., as engineers. Mr. H. Meadows and Mr. J. T. Scurlock, both of the Ministry of Agriculture and Fisheries, have been appointed as secretary and assistant secretary respectively to the Commission, and all communications should be addressed to the former at the Ministry of Agriculture and Fisheries, 10, Whitehall Place, London, S.W. 1.

Gladiolus Show at Burton-on-Trent.—A Gladiolus, show under the auspices of the National Gladiolus Show Committee, of which Mr. A. E. Amos, 10, Bergholt Road, Colchester, is Secretary, will be held at Burton-on-Trent, in conjunction with the Staffordshire and Midland Counties Great Floral Fête, on Wednesday and Thursday, August 11 and 12. A first prize of £20, and a sum of £5 to each successful competitor, whose exhibit the judges consider worthy of such an award, are offered in the class for the finest display of Gladioli, Primulinus hybrids included, arranged for artistic effect, in a space of twenty feet by four feet. A silver challenge cup is offered in a class for twenty-four spikes in twenty-four distinct varieties of large-flowered and/or Primulinus seedlings not yet in commerce and/or sorts introduced since 1923. Another Silver Challenge Cup is offered by W. H. Unwin, Esq., Histon, in a class for twenty-four spikes in twenty-four varieties of large-flowered and/or Primulinus Gladioli, open only to amateurs. Seedlings may be included, but all must be named. In a class for small amateur growers a challenge trophy, presented by Messrs. R. H. Bath, Ltd., Wisbech, is offered for six spikes of large-flowered and six spikes of Gladiolus primulinus, representing twelve distinct named varieties. Schedules may be obtained on application to the Hon. Secretary, whose address is given above.

Mr. W. Longman Corry.—Practically everyone engaged in horticultural pursuits has heard at some time or other of Mr. W. L. Corry, head of the firm of Messrs. Corry & Co., Ltd., horticultural seedsmen. This is not surprising as Mr. Corry has recently celebrated his eighty-sixth birthday and during his long life has made a hobby of his business; he still attends to business daily, and we congratulate him on the health and strength and position he enjoys. So far back as 1866, Mr. Corry laid before the Government propositions which led to the granting of the concession that Tobacco, for the purpose of manufacturing Tobacco preparations should be exempt from duty. In 1884 the introduction of nicotine for horticultural purposes was permitted, by special grant, after long and costly correspondence with the authorities. From this it will be seen that Mr. Corry has worked hard as a pioneer on behalf of his particular branch of the horticultural industry. Apart from his duties as managing director of his firm, Mr. Corry takes an interest in the horticultural charities and is seldom absent from the festival dinner of either. Although advancing years have brought disabilities in so far as practical cricket is concerned, Mr. Corry is still an enthusiastic follower of this British pastime, and if the Somersetshire county team is playing within the distance of a reasonable journey, he is almost certain to be found watching the proceedings.

MR. W. L. CORRY.

American National Arboretum.—A bill is being introduced to Congress in the United States to empower the Secretary of Agriculture to establish a National Arboretum as a park for recreational and research purposes, and also to give him the use of other government-owned lands adjacent. The sum suggested by the bill for this purpose is $300,000; the direction of the arboretum to be under the administration of the Department of Agriculture, separately from the Forestry and other Bureaux. In American nursery circles, it is confidently expected that the bill will pass the present session of the Congress.

A New Barberry.—We learn from our American contemporary, *Horticulture*, that a new red-leaved Japanese Barberry (Berberis Thunbergii atropurpurea) is to be placed on the market by the well-known firm of Henry A. Dreer, of Philadelphia. It would have been in commerce earlier, but the matter has been held up until the question had been determined as to whether or not the variety is rust-resisting. The fear was entertained that it might prove a host-plant to wheat- and other grain-rusts. Now, however, it has been pronounced by experts to be a true sport or mutation of the Japanese Barberry, and therefore immune to rust. Its habit of growth, like the fruit, is identical with that of the common Japanese Barberry, but when the foliage develops in early spring it takes on a rich bronze-red colour, slightly deeper than that of the red Japanese Maple. This colouring is retained until the autumn, and becomes more intense during the summer, instead of disappearing, as in the case of many red-leaved plants.

Award by the Royal Society of Arts.—The Royal Society of Arts has awarded one of its Medals to Sir Edward John Russell, D.Sc., F.R.S., the Director of Rothamsted Experimental Station, Harpenden, Herts, for a paper read by him before the Society. The subject of the paper was "Investigations in Agricultural Science at Rothamsted."

Regel's "Gartenflora."—We have just received the July issue of our German contemporary, *Gartenflora*, which we take to be at least a lineal descendant of the celebrated publication of that name, as the cover testifies to the fact that this is the seventy-fifth year of publication, and that the journal was founded by Eduard Regel. It is published monthly, and is very nicely got up, with a decorative cover in two colours, a colour plate as frontispiece, and the whole of the contents artistically printed on art paper. Among other articles of horticultural and botanic interest is one by Dr. R. Potonié on vegetation at various periods of the earth's existence, comprising a rather eerie pen and ink drawing of an imaginary prehistoric scene, with extinct plants growing in a marshy jungle.

Journal of Experimental Biology.—The Cambridge University Press has undertaken to publish *The British Journal of Experimental Biology*, the official medium of publication of the Society for Experimental Biology, but its contributors are by no means limited to members of this Society or to the Universities of Great Britain. The editor is Mr. James Gray, of King's College, Cambridge, who will have the assistance of Dr. Crew, of Edinburgh, and of eight other biologists representative of the different subjects concerned.

Nerines and Lachenalias at Wisley.—The Director of the R.H.S. Gardens, Wisley, desires us to point out that the trials of Nerines and Lachenalias started there last year are being continued this season. Any grower desiring to add varieties to these trials should send three bulbs of each to reach him by August 15, 1926.

Flora on Volcanos.—At the meeting of the Linnean Society held on June 10, Mr. I. H. Burkill gave an account—illustrated with lantern slides—of the vegetation found by him on lava surfaces of various ages in the crater of Kilauea, Hawaii. Specimens of the plants collected were also exhibited. Mr. H. N. Ridley stated that in Java and Sumatra he had seen no grasses on the volcanos visited by him. The species he had seen farthest up any crater were xerophytic Ferns of the genera Polypodium and Litobrochia the plants forming a short turf. Probably there was not enough moisture in these Javan and Sumatran volcanos to support a flora similar to that on Kilauea. He had seen Imperata cylindrica growing in sulphur smoke in a small crater. The grasses and sedges brought to Kilauea were wind-dispersed, widely distributed, and could grow almost anywhere. Mr. H. N. Dixon mentioned, with reference to the occurrence of the moss Trematodon in steam crevices, that a species of that genus, T. longicollis Michx., which has a distribution in North America and Europe, occurs in the latter continent only under very similar conditions, being found in crater walls on the Island of Ischia and in the hot sulphur crevices of the semi-active Solfatara at Pozzuoli, near Naples. It was an interesting problem whether the peculiarity of Trematodon that enabled it to subsist in such conditions rested in the power of the spore to germinate or in the power of the gametophyte to develop. It was curious that the cosmopolitan Funaria hygrometrica had not appeared. Miss Lorrain Smith pointed out that the colonizing of bare rocks was started in all parts of the world by lichens, followed by mosses and small flowering plants. On Krakatoa the first plant to arrive was a blue-green alga, other plants following as debris collected. Mr. J. Ramsbottom stated that the bacteria and microfungi often preceded flowering plants on sterile substrata and, together with lichens, prepared the soil for them and, doubtless were present in the roots of the Ericaceae mentioned as occurring on Kilauea. Mr. T. A. Sprague suggested that the power of the Glumaceae to produce adventitious roots would help to account for the greater speed of such species.

The "Doodle" Oak.—In the issue of July 2 of our contemporary, *The Builder*, reference is made to a historic Essex Oak, locally known as the "Doodle" Oak, which exists as an enclosed fragment in Hatfield Forest, near Takeley. This lovely stretch of Essex parkland has lately been given to the nation, and is in the charge of the National Trust, but *The Builder* remarks that the historic tree does not seem to be receiving the care that its interest deserves. It is said to be two thousand years old, and is believed by antiquarians to have been connected with ancient religious observances. It is at present almost overgrown with vegetation, and if nothing is done to preserve it, before long it will probably have rotted completely away. At a small cost the weeds and Nettles could be cleared away, and the historic remains protected adequately from the weather.

Shrewsbury Floral Fête.—There is evidence already that the great Floral Fete to be held at Shrewsbury on August 18 and 19 will be as fine a horticultural function as any of its predecessors. For the encouragement of exhibitors we may state that in the new class for a dozen Orchids the Coalport China Dessert Service is of the value of £30. instead of the fifteen guineas as stated in the schedule; in the leading classes for Sweet Peas, Roses and Fruits, the Coalport China accompanying the cash prizes is again of enhanced value, *i.e.*, £30, while the five tea services and five coffee services of Coalport China to be awarded to meritorious non-competitive exhibits are each of the value of £20, instead of ten guineas as previously announced.

Silver Leaf Disease.—The special Order issued by the Ministry of Agriculture requires all growers to remove dead wood from Plum and Apple trees affected with Silver Leaf before July 15th and to burn it immediately. Failure to comply with the provisions of the Order renders the grower liable to prosecution and a fine of £10

Appointments for the Ensuing Week.—Monday, July 19: Bolton Horticultural Society's show (two days). Tuesday, July 20: Winchester Gardeners' Association's meeting. Wednesday, July 21: Yorkshire Agricultural Society's show (three days); Sevenoaks Horticultural Society's show; National Carnation and Picotee Society's show in Carpenters Hall, Throgmorton Avenue, E.C. Friday, July 23: National Rose Society's show; Birmingham Horticultural Society's show (two days); Whitehall Horticultural Society's Show (two days). Saturday, July 24: Cannock Horticultural Society's show (two days).

"Gardeners' Chronicle" Seventy-five Years Ago.—*Crystal Palace as a Winter Garden.*—The discussions respecting the Crystal Palace are increasing in warmth and interest. Lord Brougham, in the House of Lords, pleads in its favour; Lord Campbell objects. We shall leave it to others to urge on the one hand the maintenance, on the other the removal, of this remarkable building. There is zeal in abundance on both sides, and we have no doubt that the issue between the public and the Government, or between Mr. Paxton and Lord Campbell, will be fairly tried. What Mr. Paxton proposes, as we understand him, is a *cold* house, not a *hot*-house; and this makes the whole difference between the salubrity and insalubrity of a winter garden. The utmost that would be permitted in it during winter would be the temperature of a fine London day in February—no heat—no cold—the earth dry, the east wind excluded. In other words, it would be, in winter, a winter *minus* frost, and snow, and rain; the earth, unchilled by melted ice, would continually bring forth its vernal treasures; flowers, unnipped by nocturnal congelation, would expand as in their own mild climate. The Camellia, the Chinese Azalea, eastern Hyacinths, Mesopotamian Ranunculuses, Italian Tulips and the thousand gay products of milder climates, extricated from the stern embrace of the icy north, would embellish walks and drives in which the air would be all but frozen. A minimum temperature of 34°, a maximum of 50°, in the winter, would do all this, and secure to visitors the gay flora of the Cape of Good Hope, of Australia, of the Himalayas, and of China, without exposing them to greater inconveniences than are felt when quitting a sitting room for a walk in the open air on a fine winter's day. As an example of what the Crystal Palace then would be, the iron Conservatory in the garden of the Horticultural Society may be taken as a true example. Exclusion of frost is all that is therein permitted, and no one ever found the smallest inconvenience from spending an hour or two in it in the winter time, after however long a drive or walk. And yet it is always gay with Acacias and Camellias, Rhododendrons, Orange trees and the delicious Tea-scented China Rose. This is what Mr. Paxton proposes—and this is what the metropolis will not have, if the Crystal Palace is removed. But we would represent that whatever comfort might be found in it in cold weather, at least as much may be expected during our mid-summer and autumnal heats. Mr. Paxton proposes to remove the whole of the glass sides of the building in the summer time, the effect of which would be, we presume, to cause such a continual motion of the atmosphere throughout the edifice as effectually to prevent all sensation of heat. This, combined with the water of fountains, and the shade of the climbing plants and trees that would be found there, could hardly fail to produce that peculiarly agreeable sensation which gives so indescribable a charm to every woodland scene. *Gard. Chron., July 19, 1851.*

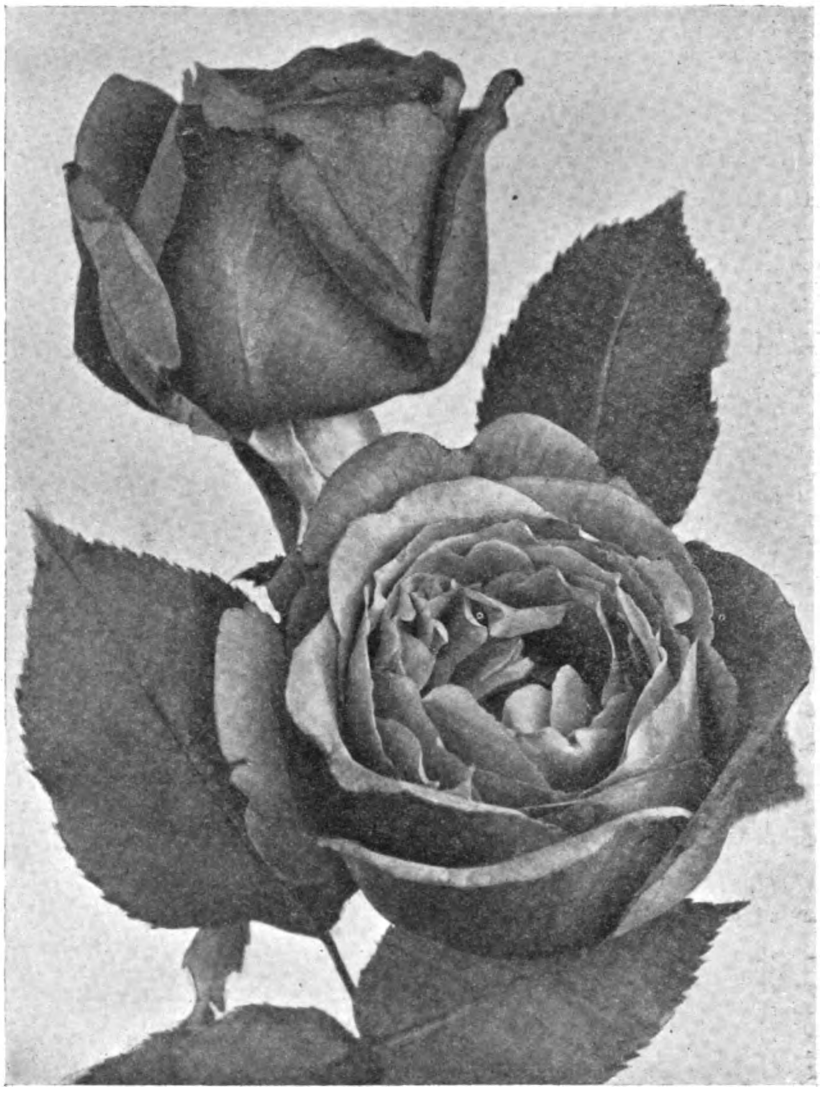

FIG. 24.—ROSE LADY HELEN MAGLONA.

N.R.S. Gold Medal, July 2. Flowers crimson. Shown by Messrs. Alex. Dickson and Sons. (see p. 37).

Publications Received.—*Flower Show Fixtures* for 1926, published by Messrs. Austin and McAslan, 89 to 95, Mitchell Street, Glasgow. Free on application.

The Week's Work.

THE KITCHEN GARDEN.

By F. Streeter, Gardener to Lord Leconfield, Petworth Park, Petworth, Sussex.

Potatos.—So soon as the haulm of the earliest Potatos has withered, the crop should be lifted and used; this will free the ground for a winter or autumn crop. If seed tubers are required for next season's crop they should be exposed to the light to harden their skins before placing them in seed-trays in a store-room. Label each variety carefully with its name and origin.

Shallots.—The bulbs are now ripe and should be lifted carefully and hardened thoroughly before storing them. Do not allow them to remain on the ground or they will soon commence to make fresh, soft growth. Lime the soil and plant it with a winter crop.

Celery.—Stir the soil along the trenches and keep it free from weeds. Dust the plants when they are damp with soot, and if the leaf-miner is troublesome pick off and burn all infected leaves. Make sure that the crop never suffers from drought; at the same time, do not let the soil become stagnant through overwatering it.

Marrows.—Marrow plants are now cropping freely and should be given a little weak liquid manure about three times weekly. Cut the fruits before they become too large, and stop the leading shoots to keep them in bounds, also cut away any leaves infested with mildew.

Beet.—The earliest sowings of Beet are quite large enough and the roots should be lifted carefully and placed in sand ready for use. The roots are often allowed to become too coarse, thus losing their colour and freshness. There is plenty of time to make another sowing which will mature before the advent of frost.

Hoeing.—Hoe the soil on frequent occasions to kill seedling weeds and do not wait until the weeds are visible.

FRUITS UNDER GLASS.

By T. Pateman, Gardener to Sir Charles Nall-Cain, Brocket Hall, Hertfordshire.

Early Pot Figs.—So soon as the early forced Figs, grown in pots, have been relieved of their crop they should be top-dressed or repotted, whichever is necessary. If the trees show signs of exhaustion caused by root restriction they should be repotted in rich loam mixed with lime rubble and burnt earth. It is essential that trees intended for forcing again next year should not be allowed too much root-space. Trees that need repotting should be allowed to remain in a cold house for a short time after this operation, where much better attention with regard to watering is likely to be paid to them. When it is noticed that the trees have become established in the new soil they may be stood out-of-doors, plunging the receptacles to rather more than half their depth in ashes to prevent them being blown over by strong winds. Trees that are not repotted should be fed judiciously with liquid manure during their growing season, and syringed vigorously with clean water to keep insects in check.

Early Figs in Borders.—Trees in the early house, which have produced their first crop of fruits, will require extra attention during hot weather in watering and feeding to assist the second crop of fruits to mature. Figs are generally grown in restricted borders, hence the necessity for keeping a watchful eye on their requirements at the roots. When the trees are well-grown they not only produce two crops but are practically perpetually in fruit during the growing season. If the trees have matured a heavy crop it will be wise to thin the fruits considerably. The trees should be fed and watered judiciously, and when the weather is hot, syringed overhead vigorously to keep them in good health and free from insect pests.

Tomatos.—Tomato plants indoors will now be carrying heavy crops and need copious supplies of liquid manure varied with a concentrated fertiliser. Where the plants are growing closely together some of the points of the leaves may be removed to allow the sun and air to reach the fruits, but this defoliation must not be done too severely or it will check root-action.

THE FLOWER GARDEN.

By F. C. Puddle, Gardener to Lord Aberconway, Bodnant, Taly-Cafn, North Wales.

Bearded Irises.—The flowering season of these beautiful plants is now ending, and any necessary dividing and replanting should be done as early as possible, for although Bearded Irises may be successfully planted at any time between July and March, the plants commence to develop new roots after they have finished flowering. They quickly become established in their new quarters, and flowering will be satisfactory next season if the transplanting is done now. Bearded Irises are of such easy culture that in many gardens they are either planted in mixed flower borders or are relegated to odd corners where more fastidious plants will not flourish. But the magnificent varieties of comparatively recent introduction place them in the front rank as garden plants, and they are well worthy of a garden to themselves. An Iris garden is perhaps most effective when it takes the form of a series of beds set in grass, or by the side of ornamental water, and it will form an interesting and beautiful feature of the garden during that rather dull period between the seasons of spring and summer flowers. An open and well-drained position is more desirable than a rich soil. Lime is usually considered necessary for the well-being of Irises, but lime is not essential for at Bodnant they succeed admirably in a lime-free soil. Under these conditions, however, a sunny and airy position is essential to success. Care should be taken when planting not to bury the rhizomes unduly or they may rot during the winter; firm but shallow planting is necessary. Although these Irises complete their flowering season comparatively early in the summer, the glaucous, sword-like foliage is very beautiful, and even in late summer the Iris garden is not without its charm. If, however, it is desired to brighten it at that time, a few beds of autumn-flowering Kniphofias may be interspersed. Galtonia candicans may also be planted amongst the Irises, if space permits, and these two subjects will provide a display in complete harmony with the Iris foliage. The dwarf Bearded Irises such as I. Chamaeiris, I. pumila and their varieties are excellent subjects for sunny positions in the rock garden, and they respond to the same cultural treatment as the taller Irises.

Pinks.—If it is desired to increase the stock of these delightful old cottage garden plants, cuttings will root readily at this season if they are inserted in a bed of sandy soil in a cool frame. The frame should be kept close and shaded during the daytime until the cuttings are rooted, but if excessive condensation of moisture is observed, the frames should be ventilated a little during the night. Dianthus Allwoodii may be propagated in the same manner and if plants are required in quantity, the cuttings will strike under these conditions with a minimum of trouble. Pinks are, perhaps, most effective when used as garden edgings, and although the many beautiful varieties of Dianthus Allwoodii have a dainty perfume, yet they cannot claim the delightful fragrance of the old-fashioned Pinks. They have, however, the great advantage of flowering continuously from May until October.

Salvias.—Several of the Salvias are useful for autumn-flowering, and include such well-known species and varieties as S. splendens, and its many varieties, the best of which for bench work are the dwarf Glory of Zurich and the newer Harbinger; for large specimens the variety pyramidalis is excellent, while the purple-flowered violacea is worth growing for contrast. Other good Salvias for autumn and winter flowering are S. leucantha, S. rubescens, S. azurea, S. grandiflora (syn. S. Pitcheri), S. involucrata var. Bethellii, S. patens, S. rutilans (Pine Apple-scented), S. Grahamii, S. Heerii and S. fulgens. All these Sages require high cultivation, and should now be placed in their flowering pots, plunging them out-of-doors in a bed of ashes, in an open, sunny situation.

HARDY FRUIT GARDEN.

By W. Auton, Gardener to Viscount Elveden, Pyrford Court, Woking, Surrey.

Sweet Cherries.—Dessert Cherries should be cut and served with a portion of the stalk attached. Gather the fruits when they are perfectly dry and handle them carefully to obviate rubbing the bloom off them. If gathered carefully when fully ripe and hung in the cool of the fruit room they will furnish supplies for some days. So soon as the crop is cleared, cleanse the trees thoroughly with a suitable insecticide and syringe them heavily with clear water every day during hot, dry weather.

Plums.—Early varieties of Plums are developing quickly, and Rivers' Early on walls are approaching maturity. If the crop is heavy, the trees may be relieved to some extent by removing a number of the fruits for immediate use. See that the leading shoots are laid in where necessary for the furnishing of the tree, and shorten all remaining growths to the fourth or fifth leaf, if this has not been done already.

Strawberries.—The crop will now be finished on early varieties, and the beds should be cleared of litter and weeds. Remove all runners as they appear and keep the beds hoed to encourage free growth for the building up of strong crowns for next years' crop. Late varieties are still carrying fruits, but the same treatment should be followed so soon as the crop is finished. Early-layered runners should be severed from the parent plants so soon as they have become well-rooted in their pots.

Watering and Feeding.—The watering of fruit trees has not made very great demands on the grower in the present season, but newly-planted trees on light soils frequently suffer from dryness at the roots, even in a comparatively moist season, and all such trees and those bearing heavy crops should be watched for any signs of distress. Give any trees requiring water a thorough soaking and apply a mulch of rotted manure immediately afterwards. Wall trees are the most likely to suffer, as not only do they frequently fail to get full advantage from the normal rainfall, but the position also tends to make them more persistent in their demands for moisture. Lack of moisture at the roots is a frequent cause of the fruits dropping. For trees bearing heavy crops nothing is more helpful than liberal applications of dilute liquid manure, but this cannot always be obtained, and a little steamed boneflour forked into the surface soil and well watered in, is a good substitute. Young, vigorous trees will not require feeding to the same extent as older ones, and quick-acting manures liable to excite growth unduly should not be used.

Loganberries.—Few fruits are more profitable than the Loganberry, for it quickly clothes an old building or fence and seldom, if ever, fails to carry a heavy crop. The new growths are exceptionally strong and should be guided into approximate positions for furnishing the space when the current crop is finished, or much trouble will be caused by interlacing.

PLANTS UNDER GLASS.

By John Coutts, Assistant Curator, Royal Botanic Gardens, Kew.

Pentas carnea.—This old garden plant, which is seldom seen nowadays, is in flower. It is easily propagated by means of cuttings inserted about this date, young shoots rooting readily in a warm propagating case. Its successful cultivation presents no difficulty as the plant grows freely in an intermediate house. The young plants should be potted on as they require it, and good flowering examples may be produced in five-inch or six-inch pots. Pinch the young shoots on several occasions to promote a bushy habit of growth.

Freesias.—Where Freesias are required in quantity the order for the bulbs should be sent forthwith, for they should be potted during August, and early potting is essential if they are required in flower about Christmas. The compost should consist of a good loam, with the addition of a little leaf-soil and enough sand to render the compost porous. Ten to twelve bulbs should be placed in a five-inch pot. Stand the pots in a cold frame, and to obviate frequent waterings keep them shaded until growth appears. I do not advise covering them with ashes or leaf-soil as is done with larger bulbs. Freesias are always best when grown in perfectly cool conditions, although they will respond to slight forcing if they are required early. It is very important that the growths be supported in time, for if the shoots are allowed to fall over, they never seem to grow with the same vigour.

Chironia linoides (syn. ixifera).—This plant flowers towards the end of the summer, and for this reason is very valuable for the greenhouse, as choice plants are by no means plentiful at that time. If cuttings are inserted at this date they should make useful plants in five-inch pots for next year. The young plants should be pinched frequently to induce a bushy habit. They will grow freely in a compost of light loam with the addition of a little fibrous peat and sand. C. floribunda, a more slender-growing plant, succeeds under the same treatment. Both species do well with cool greenhouse treatment.

FOR NORTHERN GARDENERS.

By A. T. Harrison, Gardener to the Marquis of Ailsa, Culzean Castle, Maybole, Ayrshire.

Early-flowering Chrysanthemums.—Many varieties of early-flowering Chrysanthemums are coming into flower, and where stakes were placed in position earlier, the main stems should be tied securely to them again, in order to keep the growths erect. Later varieties, including those grown in pots, should also be regularly attended to in the matters of staking and tying, and a close watch kept for the first sign of attack by green-fly and other insect pests, when the plants should be sprayed with an approved insecticide. Disbudding of early-flowering varieties is not recommended for plants grown for effect in the beds or borders, but where extra special blooms are required, timely attention to this important cultural detail will result in increased size of the flowers.

Wallflowers, etc.—Seedlings of Wallflowers and other biennials, also perennials sown as advised during May, are now ready for transplanting. They may be set in ground from which an early crop, such as Potatos, has been lifted. Such land is usually in good condition and should simply be forked over and made firm. Wallflowers, if only required to supply cut flowers or just to brighten up the borders, next spring, will succeed quite well without transplanting, simply thinning them in the seed-lines, but where they are required for filling beds and borders from October onwards, this transplanting is of immense value, as it enables the plants to be lifted with good balls of soil when transferring them to their winter quarters.

Evergreen Hedges.—The clipping of evergreen hedges should now be attended to in order to maintain that neatness which is essential in well-kept gardens and grounds. Where Escallonia macrantha is used this forms a splendid hedge, but in order to keep it in bounds it requires attention twice in the growing season and naturally when closely clipped it produces no flowers. In the rougher parts of the grounds we find it makes a most effective screen if cut only once in two years, and it produces its sprays of crimson flowers in profusion the second season. Olearia Haastii is another useful hedge-plant for seaside gardens, but it is slower growing than the foregoing. If trimmed lightly every second season it produces enormous numbers of its Daisy-like flowers, which, however, have a bad habit of remaining when dried up and withered for a very long time, and thus disfiguring what would otherwise be a beautiful evergreen. By running the hedge shears lightly over the plant when the flowers are over, many of these spent blossoms will be removed and the freshness of the hedge partially restored. Lonicera nitida is also recommended as a dainty, small-leaved hedge plant, and should be given a trial where a very neat and light hedge or boundary line is required. Berberis Darwinii also makes a very effective hedge where the biennial system of pruning can be adopted, its orange-coloured flowers being followed by masses of blue berries, which provide food for birds, and a counter attraction also at a time when these songsters are not welcomed in the fruit garden.

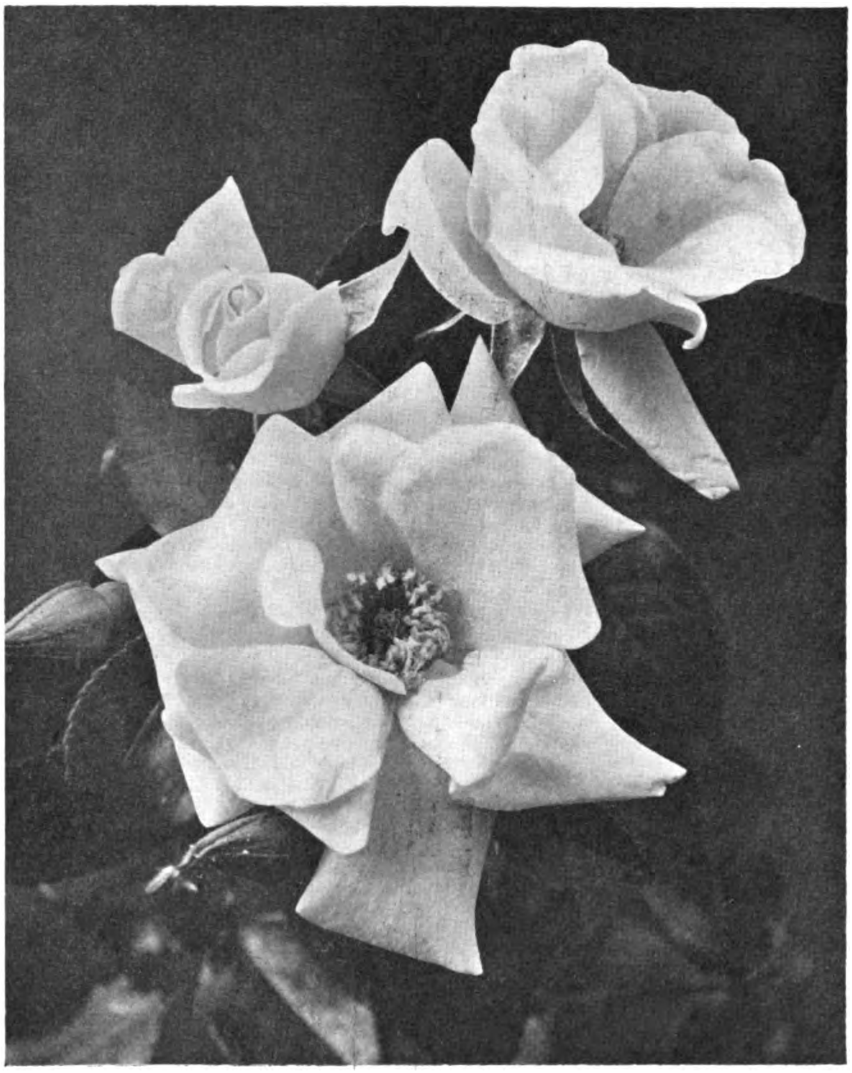

FIG. 25.—ROSE BILLY BOY.

N.R.S. Certificate of Merit, July 2. Flowers Buttercup Yellow. Shown by Messrs. G. Beckwith and Son. (see p. 37).

Dahlias.—These plants are growing rapidly, and require attention in thinning the superfluous growths and securing the remaining shoots by looping them to the stakes. Cactus, Paeony-flowered and Collerette Dahlias are best secured from damage by wind if three stakes are placed around each plant, and a band or bands of greentwist fastened around them as growth proceeds. Dwarf Dahlias, such as Coltness Gem and Dunecht Yellow require no staking, but should have the spent flowers and seed-pods removed in order to prolong the display of flowers. These dwarf Dahlias are valuable bedding plants.

Lupins, Delphiniums, etc.—So soon as the flowers of these and other perennials are spent they should be cut down and removed, when new growths will start from the base. These secondary shoots will, if the plants are watered copiously in dry weather, produce a second crop of flowers in autumn. Any specially good varieties may be marked for seed saving, but this work is generally best left in the hands of specialists who have stocks of the very finest varieties to select from, and the time and experience necessary to keep records of the crosses made.

HARDY FLOWER BORDER.

SPIRAEA ARUNCUS.

Spiraea Aruncus is one of the best of tall, hardy herbaceous plants, and where it is given opportunity for its full development, never fails to give satisfaction. It likes a good deal of moisture, and is very fine planted by a lake- or stream side. It is, however, quite at home in a good border, and I have even grown it to more than six feet tall in a far from ideal border of light soil, with a subsoil of sand and gravel only some eighteen inches below the garden soil, but it received copious supplies of water during the growing and flowering seasons.

This Spiraea is at present in bloom in my garden in a border of loam and is doing exceedingly well now that it has become established. Mine is a good form of S. Aruncus, and it is truly handsome with its fine habit, pleasing foliage and glorious plumes of creamy white flowers.

It is a thoroughly hardy perennial, readily propagated by division or from seeds. There is considerable variation among the plants in size and density of the delightful plumes of flower. It is a native of various parts in Europe, Asia and America. *S. A.*

SOWING SEEDS OF HARDY PLANTS.

So ingrained is the habit of preparing composts for sowing seeds, by sifting-loam, leaf-mould, and sometimes peat, and mixing these in nicely balanced proportion, with the judicious addition of clean sharp sand, that a prevalent impression obtains that to adopt rougher methods savours of laziness, carelessness and unnecessary waste of seeds.

There is good ground for the contention that many seeds of hardy plants resent this careful nursing, and greater success will often follow the comparatively rough treatment of being strewn over a patch of smoothly-raked soil in some quiet corner of the garden, preferably at the foot of a wall facing north, for here daylight without direct sunshine is ensured.

One of the reasons for preferring open ground sowing is that the changes of soil temperature and moisture are slower and less violent, and necessity for watering is reduced to a minimum. The raiser will naturally see that the site of a seed-bed is well prepared, and that the surface has sufficient sand raked in to keep the soil porous and prevent "caking." The seeds and the seedlings of a hardy plant are just as hardy as the adult plants, if only they are consistently treated as such; they do not freeze to death in normal winters, nor does a good thick mantle of snow in winter destroy them; indeed, it will very frequently be found that germination and growth, in spring, is all the more vigorous for the winter sojourn beneath snow. Far greater mischief is frequently done by housing seeds of hardy plants under glass, and especially by subjecting them to artificial heat for the purpose of hastening growth. I have seen in the very north of Yorkshire out-door seed-beds of Campanulas, Heucheras, Veronicas, Œnotheras, and of Eryngiums and Statices, two subjects with which most careful cultivators frequently fail, crowded with vigorous young plants in spring, despite a long winter's exposure in absolutely unprotected beds.

The point of greatest importance is to sow new seeds so soon as they are ripe, and the sowing season may therefore extend from midsummer, when the spring-flowering Primulas, etc., are ripe, to the end of September or early October, by which time not many seeds worth having will remain ungathered.

Most seeds appreciate a sprinkling of thoroughly burnt ashes from a rubbish fire, but many rock plants germinate far better if the whole surface of the soil is covered with a layer of pounded mortar rubble or sifted brick dust, the seeds being sown on this surface and gently watered in with a fine-rosed water-can. *A. J. M.*

ALPINE GARDEN.

GYPSOPHILAS FOR THE ROCKERY.

Gypsophilas in general are among the most satisfactory of rock plants, for they delight in flopping over stones, do well in any gritty soil with a sunny aspect, and most kinds will bloom unceasingly the season through.

The familiar G. repens, with its showers of white flowers and characteristic grey-green foliage, is a universal favourite, and there are many beautiful and distinct forms with both white and pink blossoms G. r. rosea is one of the best of these, and another is G. monstrosa, often listed as G. repens, but it is actually a hybrid. It is a plant of singular beauty, robust in habit and yielding copious sprays of bloom throughout the summer.

G. fratense, which gets its name from Mt. Frato, is a very charming plant of about three inches in height, closer and neater-growing than the foregoing, yet a fine subject for covering a rock face with its glaucous foliage, which it adorns with dainty flights of blossom in a good decided pink. We have this species in a moraine, but it is apparently quite sturdy enough for general planting in free soil among stones.

G. cerastoides from the Himalayas is often happier in a scree mixture, and it is a species well worth any trouble. Forming a compact, creeping mound of pale green, no more than about a couple of inches in height, G. cerastoides bears in June a profusion of large, white flowers, delicately veined with purple. G. aretioides is a species of still closer and denser habit, and seldom exceeds one inch in height. The squat cushions of foliage are dappled with cheerful little white flowers. Like the foregoing, this species is rather impatient of our wet winters, but both of these very choice rock plants will generally prove reliable on a well-drained, gritty ledge. Where there is any doubt, a sheet of glass may be placed over them during the winter.

Among many other kinds, G. Sundermannii may be mentioned as one of robust constitution which will yield its fine, white flowers in abundance under almost any conditions. It inherits the best qualities of its two notable parents, viz., G. cerastoides and G. repens. *A. T. J.*

PAPAVER TRINIAEFOLIUM.

A weakness for the Poppy family leads one to try different species when the opportunity offers, so that one may be acquainted with the race as a whole. instead of cultivating only a few of the most popular forms. This once led to my acquisition of a packet of seeds of Papaver triniaefolium, a curious Poppy from Asia Minor. It is now many years since I grew it, and I had almost forgotten it until recently when I came upon an illustration and description of the plant. It was sufficient to recall its appearance, though it is difficult to describe. It is exceedingly unlike a Poppy when in leaf only, as its leaves spread out almost flatly, and are cut and recut into fine divisions, all of a silvery hue. Looking at the plant at this stage, one is inclined to anticipate a striking inflorescence from this delightful basal growth. But bitter disappointment awaits the gardener, for the inflorescence consists of a spire of small, pallid blooms of no grace to commend them. After flowering, the plant dies, and it must be treated as a biennial, sowing seeds every year to keep up the succession. It is one of the most singular-looking of the race, and is worthy of the notice of anyone who is a botanist as well as a gardener.

CYTISUS ARDOINII.

A precious little treasure among the few Brooms suitable for the small rock garden as well as the large one, is that named Cytisus Ardoinii, from the heights above the Mediterranean, which has been in cultivation for very many years, but which Mr. Farrer, who appears to have prized it highly, stated was rare. It is, certainly, rarer than it was, but it is in commerce and deserves to be very widely grown among the choicer plants of the rock garden. It is a little Broom indeed, with rather prostrate habit, and only a few inches high, giving an abundance of delightful small yellow flowers. It is propagated by layers or cuttings, and, despite its southern origin, is hardy, but is sometimes lost by being overcrowded and overhung by more rampant plants. It is admirably suited for planting in sunny parts of the rock garden, and I have never seen it happier than in the crevices near the top of a low retaining wall in the Edinburgh district, where it was at one time a favourite plant. C. Ardoinii is one of the little shrubs not well enough known, but worthy of the loving care of the admirer of the best alpine plants.

PAROCHETUS COMMUNIS.

It is always with sorrow that one has to say about certain plants that they are not hardy enough to withstand the weather everywhere in the United Kingdom, and that, beautiful as they are, they must be left alone by those who dwell where the climate in winter is very trying. Parochetus communis, a charming, blue, Pea-like flower, is one of these, although some appear to think it is hardier than is generally believed. In the south and west of England and in the greater part of Ireland it rarely suffers much, but in the midlands and north of England and the greater part of Scotland it is not to be relied on. In some parts of the west of Scotland it is fairly hardy, and I once saw a good spreading plant of it in an Ayrshire garden, not on, but not far from, the coast. The Parochetus, if left alone, where happy, will soon cover yards with its Clover-like leaves, and in late summer and autumn will blossom forth with a multitude of lovely blue Peas of amazingly varied tones. It is a plant which will hold its own, and far more than its own, if the climate should be suitable. Where it is found tender, cuttings may be taken off in autumn and struck under glass. It likes sun but a fairly moist position. *S. Arnott.*

BULB GARDEN.

BRODIAEA HYACINTHINA LACTEA.

The species of Brodiaea are so varied in the form of their flowers that one is not surprised to find that some of them have had a variety of names given them. That under notice was named B. hyacinthina by Baker for the blue-purple form, and Sereno Watson named the white one variety lactea. During the latter half of June a fine colony of it flowered in the gardens of the Royal Horticultural Society, Wisley. I understand it was one of the late Mr. G. F. Wilson's plants, so it is well able to take care of itself. At first sight, this Brodiaea resembles a Nothoscordum with its white perianth and a green rib to each segment, but there the similarity ends, for the perianth is united at the base, forming a wide cup, with spreading segments, and the rootstock is a solid, thinly tunicated corm, not a bulb. The whole colony was flowering profusely in umbels of twenty-five or more flowers each.

Some of the species of Brodiaea have only one flower on a scape; others have tubular flowers; while a third set has the upper part of the tube greatly amplified. The subject of this note has six perfect stamens, but a number of others have only three perfect ones, while the filaments of the barren stamens are greatly dilated and may be coloured like the perianth.

Judging by the behaviour of the Wisley plant a number of the species might be more common in gardens, if the corms were planted in sandy soil and left undisturbed for many years. The specimens at Wisley were over two feet high, and in no way degenerated. *J. F.*

TREES AND SHRUBS.

GENISTA RADIATA.

THE above Broom is by no means a common one in the gardens of Britain; and possibly its liking for a particular kind of soil prevents it from flowering freely, even if planted.

It was introduced to this country in 1758, so one may conclude it has been tried fairly frequently. There are two fine bushes of it flowering freely in one of the shrubberies belonging to the Corporation of Richmond; they are beautiful, interesting and curious on account of their peculiar habit. The branches and leaves are opposite, and from the ends of the larger branches, slender twigs radiate in all directions, and appear to weigh down the branches, for they droop gracefully. The small leaves are short-lived and soon fall, but the twigs remain of a decided green in summer and winter.

The soil in which these plants are growing is very sandy, but deep, and the bushes are fully three feet high, notwithstanding the twiggy, slender, drooping branches. Since the commencement of July these bushes have been covered with a profusion of bright yellow flowers at the tips of the twigs. *J. F.*

NOTOSPARTIUM CARMICHAELIAE.

THIS shrub generally grows four feet or five feet high, but it will attain a greater height than this under very favourable conditions. It has rush-like leaves and develops clusters of delightful rosy-pink flowers in July. The plant has not the best reputation for hardiness and I regret that I cannot recommend it for every garden. In the south and west of England and Ireland and in the south-west and west of Scotland it is usually hardy. In a favoured spot in the south-west of Scotland a plant of N. Carmichaeliae is growing on the summit of a large rock garden in dry soil, and not against a wall. One very severe winter, within the last twenty years, this particular plant was cut to the ground and regarded as killed. A young plant was procured, but subsequently the old one made fresh growths from the base and in a season or two was as good as ever.

N. Carmichaeliae delights in a sunny place and light, dry soil; it does not transplant readily, and it is best to purchase young plants in pots and to plant them out without disturbing the roots, except to loosen some of them if the plant is completely root-bound. Sir Herbert Maxwell, in his charming book entitled *Flowers*, states that he has grown this plant for many years, but that it has not flowered with him. *S. Arnott.*

NEW PERPETUAL-FLOWERING CARNATIONS.

THE following new varieties of Perpetual-flowering Carnations have been registered with the British Carnation Society. The descriptions are furnished by the Hon. Secretary, Mr. P. F. Bunyard.

Rose-du-Barry.—A variety of pink colour, shading to silvery pink. The blooms measure three-and-a-half inches across and have a moderately strong fragrance. The habit and stem are good, the latter being of considerable length. Registered by Mr. J. C. Beck, The Nurseries, Henley-on-Thames.

Canadian Pink.—A mid-salmon variety with blooms three-and-a-half inches across and possessing a mild fragrance. The stems are long and the growth is free.

Cottage Maid of Wivelsfield.—This variety is ivory-white overshadowed with rouge-pink and the fragrance is strong. The habit is similar to that of Improved White Wonder.

Downs Beauty.—A bright crimson variety similar to the old Una Pike Carnation. It has a very rich fragrance. The three foregoing varieties were registered by Messrs. Allwood Bros., Haywards Heath.

Derek.—This variety has red blooms measuring three-and-a-half inches to four inches across. The habit and stem are good and the calyx seldom splits.

Lady Willington.—A mauve, striped cerise variety, very free-flowering.

Melchet Beauty.—A very fragrant variety of mauve colour striped with cerise. The three foregoing varieties were registered by Lady Mond, Melchet Court, Romsey.

Milady.—A seedling near to the variety Enchantress. Registered by Mr. E. W. Bishop, Elmhurst, St. Leonards Road, Windsor.

Charles Pierlot.—A variety of apricot shade; the blooms measure five inches across and they have a slight fragrance. The habit and stem are good. Registered by Mr. E. Martin Smith, Codicote Lodge, Welwyn.

Margaret.—A purple-crimson variety. The flower measures nearly five inches across and has a slight fragrance. The habit and stem are rather weak for the bloom and the calyx splits. Registered by Mr. A. J. Pointing, Appleton Nursery, Bulpham, Essex.

Edith.—A fragrant purple variety with a good habit and stem. Registered by Mr. A. J. Pointing.

Startler.—An orange-scarlet, fragrant variety; the blooms measure three inches across. The flowering is very free; the stems are erect and strong.

Citron.—This variety has lemon-yellow flowers with a few pink stripes. There is no fragrance. The stems are strong and wiry.

Palette.—A variety with a yellow ground overlaid with pink and apricot. The blooms measure some three inches across. There is no fragrance; the stems are of fair substance.

Dorcas.—A crimson variety, very strongly scented. The habit and stems are good.

Vesta.—A variety of dark rose-pink shade and fragrant. It is a dwarf grower with strong, erect stems,

Brenda.—A red, shaded crimson variety; the flower measures nearly four inches across, and has a good scent. The stems are wiry.

Katja.—A mauve variety with a fair fragrance and strong stems.

Hebe.—A deep salmon-pink variety with a good fragrance. The foregoing eight varieties were registered by Messrs. C. Engelmann, Ltd., Saffron Walden.

Brilliant Improved (Page's).—A scarlet variety of medium fragrance. Registered by Mr. W. H. Page, Tangley Nursery, Hampton.

ORCHID NOTES AND GLEANINGS.

EVERGREEN DISAS.

DISA grandiflora (uniflora) the "Pride of Table Mountain," with its stout spikes of large, scarlet flowers, takes the leading place in the section of Disa which includes the rose-purple D. racemosa and the smaller, white, purple-spotted D. tripetaloides, all of which are well-established in gardens. Hybrids between them add to a section which, to those who successfully cultivate them, give little trouble and a profusion of long-lasting flowers. But many growers fail to get satisfactory results, and in a short time lose their specimens, even while ample means of success are readily available.

The species grow at high altitudes in South Africa, on the banks of the rocky rivulets, and are sometimes submerged; never, or rarely, in dry surroundings. They have two methods of continuing their growth, namely, by the tubers for the next flowering, and soft underground stolons, which come to the surface and form green growths in the proper season. Thus the plants may be said to be growing all the year round. One of the errors which bring about collapse is drying the plants off after flowering.

Growing Disas in the open air the greater part of the year has been practised by many with success; and a few, such as the late Mr. Smee, at Carshalton, and Mr. Kingsmill, at Harrow Weald, have had success in the rockery, merely sheltering the plants by glass screens in winter.

Pure air, a reasonable amount of sunlight and a good supply of water to the freely-drained material in which they are potted are the chief essentials.

The rooting material used for D. grandiflora and its allies in the early days of their culture was composed of Bracken-root peat, live Sphagnum-moss, and a small proportion of yellow loam-fibre. But modern practice has led to a lighter and less sustaining material being used, in some cases with a large proportion of decayed leaves and sand, and that seems to account for the increasing mortality in the Disas to-day. A point to remember is that these Disas are cold greenhouse plants, and not Orchid-house subjects; and if they spend the summer in the open garden this ensures their healthy growth and profuse flowering. But wherever placed, they must be well looked after, and especially in regard to thrips, which are their chief insect enemies and which are always in evidence, even in the open garden. *J. O'Brien.*

NEW HYBRID ORCHIDS.

(*Continued from June* 12, vol. LXXIX, *p.* 421).

Name.	Parentage.	Exhibitor.
Brasso-Laelio-Cattleya Hymen	L.-C. Hyeana × B.-C. Digbyano-Mossiae	Sanders.
Cattleya Priscilla	Luddemanniana × Enid	Cowan & Co.
Cymbidium Suttonae	I'Ansonii × eburneo-Lowianum	Sutton Bros.
Cypripedium Salmondsonianum	Rothschildianum × Massaianum	O. Salmondson, Esq.
Laelio-Cattleya Frank Davies	C. Mossiae × L.-C. Cora plumosa	Sanders.
Miltonia Blushing Bride	vexillaria H. E. Miller × Princess Alice	Sir J. Colman.
Miltonia Princess Elizabeth	vexillaria G. D. Owen × ?	Black and Flory.
Miltonia Kennie	Venus × vexillaria G. D. Owen	Black and Flory.
Odontioda Auriga	Oda. Scarlet Pimpernel × Oda. Jupiter	Charlesworth & Co.
Odontioda Gwyneth	Oda. Hilda × Oda. Chantecler	Charlesworth & Co.
Odontioda Hivernia	Oda. Zenobia × Oda. Brewii	Charlesworth & Co.
Odontioda Nanette	Oda. Zenobia × Oda. Zampa	Charlesworth & Co.
Odontioda Princess Elizabeth	Oda. Madeline × Odm. The Czar	Charlesworth & Co.
Odontioda Ruddy Glow	Odm. Othello × Oda. Chantecler	C. J. Lucas, Esq.
Odontioda Theseus	Odm. Olympia × Oda. Nada	J. & A. McBean.
Odontoglossum Arcturus	Mirum × Everest	J. & A. McBean.
Odontoglossum Auriga	harvengtense × waltonense	J. & A. McBean.
Odontoglossum Devittae	Gattonthello × crispum Franz Masereel	Sir J. Colman.
Odontoglossum Dione	Laurentia × Georgius Rex	Charlesworth & Co.
Odontoglossum Icaris	Doreen × Georgius Rex	Charlesworth & Co.
Odontoglossum Monica	Cordoba × President Poincare	Cowan & Co.
Odontoglossum Naomi	Penelope × crispo-Solon	Charlesworth & Co.
Odontoglossum Ortalis	Felicity × Beau Brummel	Charlesworth & Co.
Odontoglossum Pepita	Princess Mary × eximium	J. & A. McBean.
Odontoglossum perculto-Solon	percultum × Solon	J. J. Bolton, Esq.
Odontoglossum southgatense	Gorizia × Georgius Rex	Cowan & Co.
Odontoglossum Vunula	Clovis × Doreen	Charlesworth & Co.
Potinara Princess Shimadzu	S.-L.-C. Dorila × B.-C. Mrs. J. Leemann	Prince Shimadzu.
Sophro-Cattleya Arabella	S.-C. Doris × C. Lord Rothschild	Prince Shimadzu.

INDOOR PLANTS.

SALVIA SPLENDENS.

Although one of the oldest of winter-flowering plants suitable for the decoration of the conservatory this Salvia still remains one of the most useful. Small plants not exceeding twelve or fifteen inches in height and as much in diameter are highly ornamental, but specimens several feet high and as much through, bristling with their brilliant scarlet flower-spikes, produce a gorgeous and magnificent effect.

The plant is a gross feeder and soon becomes starved in pots, hence, to produce large specimens it is advisable to grow this Salvia in the open border during the summer. If planted in rich soil in a partially shaded position the plants make growth freely and have little tendency to flower.

This plant is very susceptible to the attacks of red spider, and great care should be taken that ample water is given it ; frequent syringings during July and August are also beneficial and prevent attacks. By September those that have been transplanted out-of-doors will have made specimens three or four feet high and well-furnished with side growths, when they should be lifted with good balls of soil and put into nine-inch or ten-inch pots. Managed in this way and placed in a greenhouse when potted, they begin to flower in November and continue to produce their showy flowers during the darkest winter months. *A. P. C.*

SALPIGLOSSIS.

This beautiful annual requires a longer growing season than most, and if required in flower next May, seeds should be sown in a cool house about the middle of July ; at least, this is necessary in the immediate neighbourhood of London, but in the country, where better conditions as regards winter light obtain, sowing may be deferred until the beginning of August. The cultivation of Salpiglossis in pots is by no means easy and the plants require careful attention at all times.

The seedlings should be pricked off into pans or boxes, and when large enough, should be placed singly in thumb pots, afterwards potting them on as they require it until they are in forty-eight sized pots, in which they should be wintered, keeping them near to the roof-glass in a light, airy greenhouse. Afford the roots water very carefully during the winter. Early in the New Year the plants should be ready for moving into their flowering pots, those of six-inches diameter being suitable.

CALCEOLARIA.

Seeds of the large-flowered florists' varieties of Calceolaria should be sown during July and August in a cool greenhouse. The seed pan should be filled with fine compost and watered several hours before the seeds are sown. The very fine seeds should be sown carefully and covered with a light sprinkling of clean silver sand. Cover the seed-pan with a piece of glass and keep the soil shaded until germination takes place. The seedlings should be pricked off into pans or boxes, transferring them to thumb pots when large enough, afterwards potting them on as they require it.

This class of Calceolaria should be grown in perfectly cool conditions at all times ; the plants enjoy a moist atmosphere, and as they are very subject to attacks of green-fly, the house in which they are grown should be fumigated lightly on several occasions. *J. Coutts.*

CELSIA ARCTURUS.

This pretty pot plant is sometimes described in nurserymen's catalogues as a winter-flowering subject, but anyone visiting Kew Gardens during May or June will generally find a lovely batch in flower looking a perfect picture.

The seeds should now be sown in a fairly rich compost and placed in a warm greenhouse. So soon as the seedlings are large enough to handle, place them in three-inch pots and when established remove them to a cool frame.

This is important, for nothing is more detrimental to this plant than artificial warmth ; even when they are fully established they must be given cool treatment, otherwise they will soon become leggy.

As the pots become filled with roots, shift the plants into five-inch pots, using similar compost as before.

After potting them, keep the plants close for about a week or ten days and water them with great care. When the plants are established admit plenty of air and gradually increase the amount each day until the lights are removed altogether, only putting them in position when the weather is very wet.

To grow fine specimens they should be stood on a cool base of either ashes or slates.

Plants that are needed for decorative purposes should be shifted into larger pots, but for ordinary greenhouse decoration five-inch pots will be found the most convenient size to handle.

When the flower buds appear a stimulant of some kind will be beneficial and a suitable one consists of a mixture of soot and cow manure. This stimulant should be applied once a week with an occasional application of Clay's fertiliser in solution.

It is a good plan to pull out the first flower spikes then, instead of the plant having only one flower spike, several will develop. Discarding the first flower spike will retard flowering for about three weeks but the final result justifies the delay. *G. Barton.*

FIG.—26—MILLWATER: HERBACEOUS BORDERS AND PERGOLA.

(see p. 50.)

SWEET PEA TRIALS.

During the many years the National Sweet Pea Society has conducted trials of new Sweet Peas various circumstances have compelled the committee to change its site. Trials have been held at Reading, Guildford, Hinckley, Roxwell and Brentford, and in the present season they have been conducted at Twickenham, on Messrs. Watkins and Simpson's trial grounds, where they were inspected on July 8 by nearly fifty members of the N.S.P.S.

The trials have been very ably conducted this year, thanks to the keen interest taken in them by Mr. J. M. Bridgeford, one of the Directors of Messrs. Watkins and Simpson, and Treasurer of the National Sweet Pea Society, who offered to carry out the trials as one of the items to mark the jubilee of his firm. Mr. Alfred Watkins was present on July 2, with Mr. Bridgeford, and they generously entertained the members to luncheon and tea near their Feltham establishment—hospitality that was greatly appreciated, and for which the President of the N.S.P.S., Mr. Leonard Collingridge, tendered thanks.

Prior to this visit, the Floral Committee had made its inspection of the trials, visiting them on two occasions at an interval of rather more than a week. The trials included 101 novelties, and near-by were grown the varieties selected from the Society's Classification List, while a little further on Messrs. Watkins and Simpson's own trials were growing; the whole producing a fine display of bloom. Not for many years have the Society's trials been in such good condition, either for the Floral Committee or the general inspection. On July 2 the majority of the rows were smothered in flowers, and the sunshine was brilliant enough to test severely the colour-holding capacity of the richer-hued varieties.

The Floral Committee had made the following awards:—

First-Class Certificate.

Mrs. A. Searls.—A strong-growing variety that should prove good alike for exhibition purposes and for garden decoration. Although grown in the orange-scarlet set of trials, it does not belong to this section, as its colour is salmon, and variously described by experts as salmon-cerise and shrimp-pink. This variety was reserved for the Society's Gold Medal, an award it will receive if it proves true in next year's trials. This handsome variety was raised and sent to the trials by Mr. H. J. Damerum.

Awards of Merit.

No. 104 (*No.* 5 *in Trial*).—This, at present, unnamed variety, is of rich blue colouring, free-flowering and very fine in the mass, as in the case of a row in full bloom. The flowers are of good size and substance and mostly in fours. Sent by Messrs. R. Bolton and Son.

No. 22A (*No.* 10 *in Trial*).—A very dainty pale blush Sweet Pea of good form; this is sure to find favour with ladies. Sent by Messrs. Ireland and Hitchcock.

No. 135/4 (*No.* 27 *in Trial.*)—Although not a very strong grower as represented at the trials, this variety presents a new and subtle shade of delicate cream-pink and is very pleasing. Flowers mostly in fours. Shown by Messrs. R. Bolton and Son.

No. 22 (*No.* 25 *in Trial*).—A useful addition to the deep cream-coloured varieties. The colour is very pronounced in the newly opened buds and the frilling of the opened blooms together with many double standards renders the variety very effective for garden decoration. Shown by Messrs. R. Bolton and Son.

Carmelita.—A large-flowered American variety of clear, lively pink colour, charmingly flushed with rose. A beautiful Sweet Pea. Sent by Messrs. C. C. Morse and Co.

No. 96 (*No.* 49 *in Trial*). *Chieftain.*—This splendid Sweet Pea is of a lovely deep mauve colour, and, as the flowers are large and freely borne on stout stems, it should prove valuable both for garden decoration and exhibition use. Sent by Messrs. Thomas Cullen and Sons.

Other Varieties.

A remarkably interesting feature of the trials was the few instances of mixed stocks, this proving the great advances made in securing purity ere the varieties are distributed. Sixty-three novelties were true, while fifteen contained only one colour rogue, and three had two rogues of one colour.

FIG. 27.—MILLWATER: GARDEN HOUSE BY THE WATER SIDE.

(see p. 50).

Boy Blue, sent by Messrs. Thomas Cullen and Son, attracted attention by reason of its brightness and its abundance of bloom. This variety was awarded the Carter Cup last year as being the greatest advance in gentian-blue colour. Messrs. W. Atlee Burpee and Co.'s No. 240 is a very showy orange-scarlet, but the flowers are on the small side; the same firm's No. 296 is an orange-pink or light salmon variety of considerable merit. The Philadelphia firm have also a good scarlet in their No. 236.

Ruddigore (Messrs. Thomas Cullen and Sons) arrested attention by reason of the clear, rich scarlet-crimson flowers, the blooms being entirely self-coloured. Mr. F. C. Woodcock has a very pleasing clear lilac variety in trial, No. 43. Messrs. E. W. King and Co.'s No. 2 (No. 50 in Trial) is a good mauve Sweet Pea of fine size, Apple Blossom, a variety sent by the Moa Seed Farm, is very pleasing, free and useful to the garden. Messrs. C. C. Morse and Co. have a good orange-scarlet sort (No. 62 in Trial) that is quite true in colour. Mr. J. Stevenson's Rose Marie met with the approval of most visitors. Defiance is a very rich scarlet variety from the Waller-Franklin Co., while the same firm has a good white in Snowball, as also has Mr. Fred Cousins, in Hannah, but modern white Sweet Peas lack the substance that was so characteristic of the old grandiflora variety Dorothy Eckford. Avalanche sent by Messrs. Sutton and Sons, and an unnamed white from Messrs R. Bolton and Son also possess considerable merits but, unfortunately, both stocks contained a colour rogue. At the end of next week the trial varieties will be destroyed, but in the meantime members who did not join in the organised visit may see the trials on application to Mr. J. M. Bridgeford, at 27, Drury Lane, W.C.2.

After inspecting the trials the members of the N.S.P.S. visited Messrs. Watkins and Simpson's finely-kept and extensive trial grounds at Feltham, where they saw splendid stocks of Antirrhinums (some entirely new), blue Nemesias, Foxgloves, Petunias, Pentstemons (as fine as many named sorts), Marigolds, Violas, Stocks, Cosmos, Gilia and many other popular flowers, with extensive plots of vegetables, all growing for seed.

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MILLWATER,

MILLWATER, the residence of Sir Wilfred and Lady Stokes, is situated at Ockham, Ripley, in Surrey, a short distance from the Portsmouth road, from which the house is reached by a lane winding between tall Elms. The house is partly screened from general view by the surrounding trees and flanked by picturesque farm buildings.

A short distance away stands Ockham Mill, from which the stream that has given the house its name rushes down through a culvert to follow a course through the whole length of the garden, and in Fig. 27 is seen the stream flowing at the foot of an imposing garden house.

The planning of a garden amid such surroundings seems to call for informal treatment, and it becomes evident on approaching the grounds that planning and planting have been so carried out as to be in perfect harmony with all that lies around.

In front of the house is a small enclosed garden; the path to the entrance passing between narrow beds of herbaceous plants. The front of the house (Fig. 28) is well covered by climbing shrubs. At the foot of these, facing south, are various bulbous and other plants suited to this aspect. Ixiolirion Ledebourii was flowering abundantly in early June, and later in the summer Tigridias make a bright display.

To the left of the house, beneath fine specimens of purple Beech and Ailanthus, and along a covered passage through the recent extension of the house, the visitor reaches a small lawn facing the stream and surrounded by climbing Roses. The greater part of the garden lies behind, and on a higher level than, the house, and is separated from the stream by a high, grass-covered bank. A paved path on the lower level follows the course of the water for some distance, access to this being gained by flights of delightful old red-brick steps (see Supplement Plate).

At a bend in the stream is the garden house referred to above (Fig. 27) covered with Roses and Wistaria. Some of the newer Berberis hybrids together with Diervillas and Cytisus have been planted higher up on the bank.

The upper part of this charming garden is largely occupied by herbaceous plants and flowering shrubs, comparatively little space being devoted to fruit and vegetables. The herbaceous garden (Fig. 29) is extremely attractive throughout the summer. The beautiful borders of hardy herbaceous plants separated by a broad path are shown well in the illustration. Many of the newer varieties and species are to be found growing side by side with such old cottage-garden favourites as Lilium candidum, Hesperis matronalis and Aconitum Napellus.

The restful, old-world atmosphere is accentuated by the predominance of pale blue and mauve flowers. In early June masses of Nepeta Mussinii, varieties of Iris pallida and Lupins supplied the bulk of the colour, while pink Oriental Poppies, Aquilegias and the first spikes of Delphinium, assisted to form a very pleasing picture.

The photograph reproduced in Fig. 26 shows the garden at the back of the house with pergola spanning the brick path, and flowers on either side.

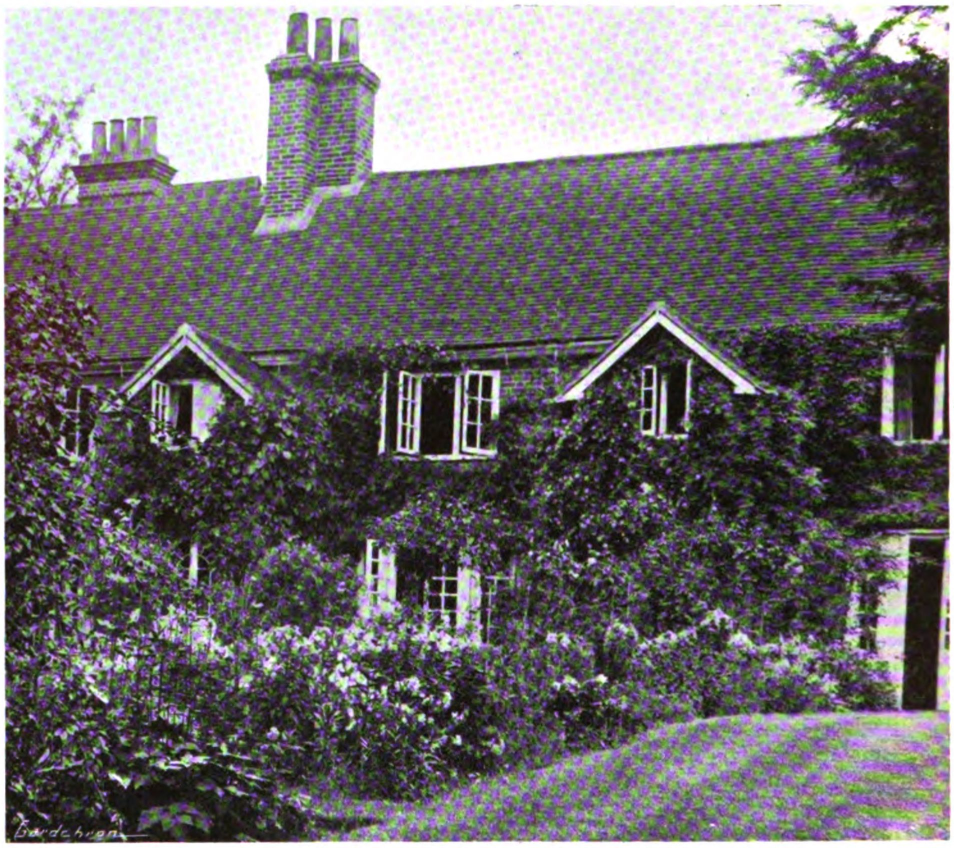


FIG. 28.—MILLWATER: PART OF THE HOUSE, CLOTHED WITH CLIMBING PLANTS.

The collection of shrubs includes many fine species of which Rosa Moyesii, with its arching, seven-foot stems, is one of the most attractive. Other beautiful shrubs noted were Viburnum Carlesii, V. rhytidophyllum, Kalmia latifolia, Berberis Jamesiana, B. pruinosa, Abutilon vitifolium, and Lonicera nitida. The collection also includes many varieties of Roses, Ceanothus, Philadelphus, Deutzia, Pyrus, Azalea, Cistus and Cotoneaster.

It is interesting to note that but a few years ago the site of this delightful garden was for the most part rough and unplanted, and it is due to Lady Stokes' keen interest in plants that such rapid improvement has taken place.

In conclusion, the writer wishes to express his thanks to Sir Wilfred and Lady Stokes for permission to visit their garden and to secure the photographs from which the illustrations in the Supplement Plate and Figs. 26, 27, 28 and 29 are reproduced. *N. K. G.*

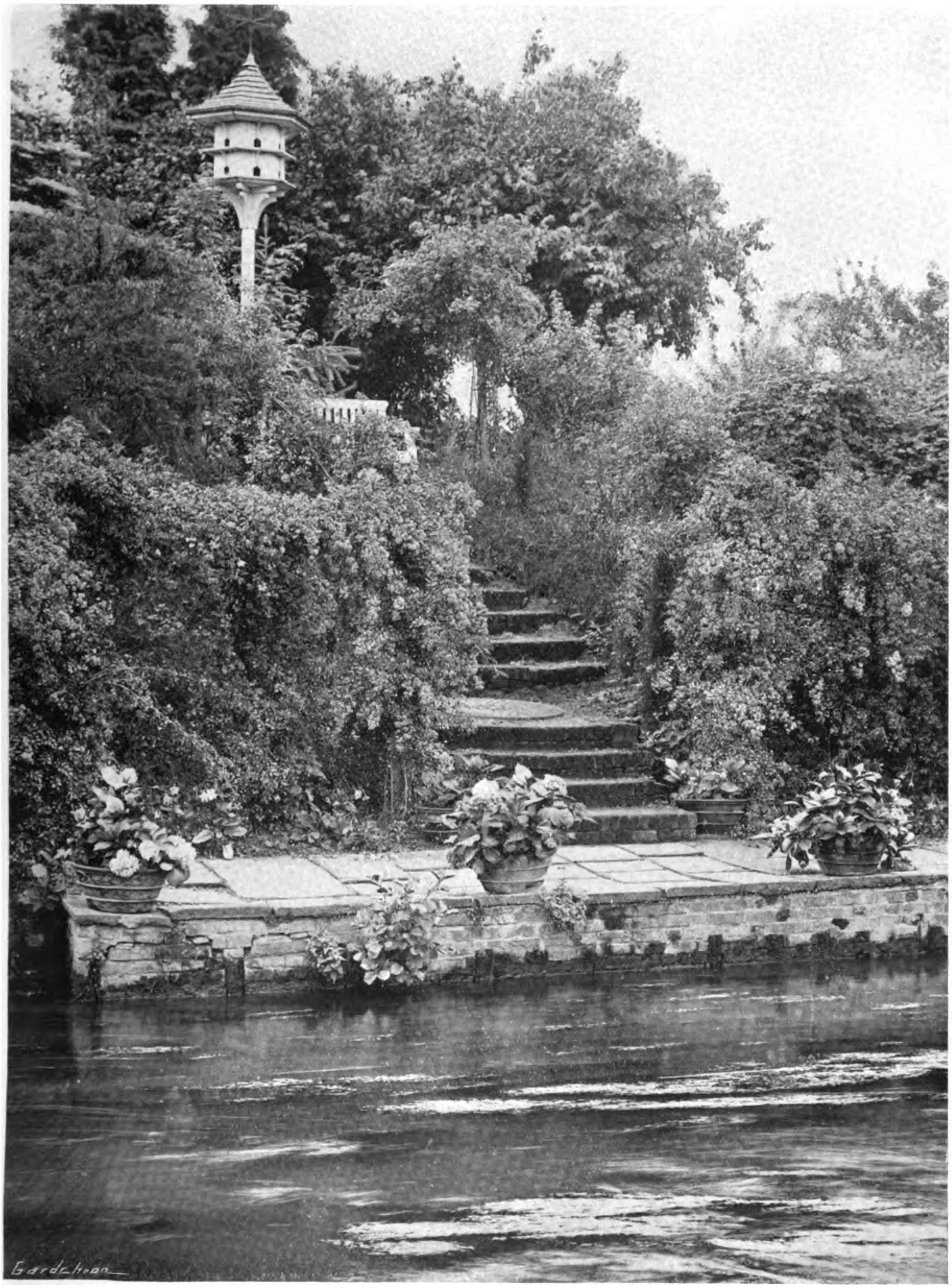
GARDEN NOTES FROM SOUTH-WEST SCOTLAND.

No region—not even China and the Himalaya,—has contributed more generously than Chile to the decoration of garden and woodland in our humid west. Abutilon, Desfontainea, Embothrium, Solanum, Eucryphia, Berberis, Berberidopsis, Tricuspidaria—to name but a fraction of the fine things we owe to that country—make themselves quite at home in the milder districts of Great Britain and cause one to wonder how we got on without them before they were introduced. The last-named, Tricuspidaria lanceolata (would that somebody would invent a convenient English title for it!), has been in special glory during the jocund month of June. Broad bushes, sixteen feet high, were not only loaded with carmine bells, but were also hung with flower buds for next year's festival. I do not know any other shrub or tree that exhibits similar precocity.

Given a moist soil free from lime, all these shrubs or small trees are of easy cultivation in the milder districts of this country; but there is one that too often baffles the most sedulous attention, namely, Mutisia decurrens. It seems to suffer more from our winter wet than from frost. Out of seven or eight specimens which we have planted here from time to time only one has flourished, climbing to a height of eight feet through a bush of Cotoneaster horizontalis, and never failing during about twenty years to display its great orange blossoms. But that fine plant is now no more, having succumbed to the past inclement winter. We deplore its demise, not only because of its decorative qualities, but because Mutisia is the only genus of Composites that climbs by tendrils.

Among British wild flowers there are but three that display scarlet or orange in their

Supplement to the GARDENERS' CHRONICLE.



GARDEN STEPS AT MILLWATER, RIPLEY.

perianth, namely, the Corn Poppy, the Scarlet Pimpernel and Adonis autumnalis, and whereas these are found only in cultivated ground, it may be assumed, I think, that they are of alien origin. Many Chilian herbs flaunt these gay colours; Hippeastrum pratense, for instance (better known as Habranthus pratensis) which is much hardier than is generally known and deserves to be more often grown in borders, where it increases fast. Its blossoms are freely produced in late May and early June; but these are of such intense orange-vermilion as to demand judicious placing lest they clash with less flaring flowers. The rich rose of a clump of Incarvillea Delavayi was completely marred this year by the proximity of this Hippeastrum, whereof some bulbs had been left accidently beside it when the rest were removed to avert the discord.

To Chile we owe some charming species of Tropaeolum. Everybody knows and admires the Flame Flower, T. speciosum, although it is only in north country gardens where it acquires the lavish luxuriance of a weed; but T. polyphyllum will flourish anywhere, and is not grown so often as it deserves. There is no richer drapery for a dry bank or raised border edging than its wreaths of soft yellow blossoms, with petals longer than the calyx, in delicate contrast with its blue-grey leaves.

Very different from the temperate air and cool soil of southern Chile must be the sun-baked upland and steaming forests of Mexico; yet there are a few natives even of that torrid land which are content with such warmth as may be accorded them in the milder parts of Great Britain. Salvia patens comes through our hardest winters unhurt, flowering abundantly in August and September. I planted three roots of Beschorneria yuccoides in a wood, treatment which they resented by languishing feebly for two or three years. Finally, only one survived the wet winter of 1924-5 and was removed to warmer quarters under a south wall. It has responded by sending up a ruddy shaft well over six feet high bearing branches clothed with scarlet bracts and green flowers. It is a interesting Amaryllid, commanding attention from visitors, which would merge into admiration if the flowers were more attractive.

Lobelia laxiflora (formerly L. Cavanillesii) is another Mexican plant responding to similar treatment. In stature not exceeding eighteen inches, it spreads freely under a south wall and bears plenty of its scarlet and yellow flowers after mid-summer.

Some plants never attain their best except in woodland. Among these is Lilium pyrenaicum, which is not of high repute among Lily experts, probably because it never does itself justice in cultivated soil. We have had here for long a quantity of the red-flowered variety which never grows more than three feet high in the garden with rather weak stems whereas those that were removed into an open wood three or four years ago have sent up sturdy, well-clothed stems to a height of five feet crowned with a rich raceme of scarlet Turk's caps. *Herbert Maxwell, Monreith, Whauphill, Wigtownshire.*

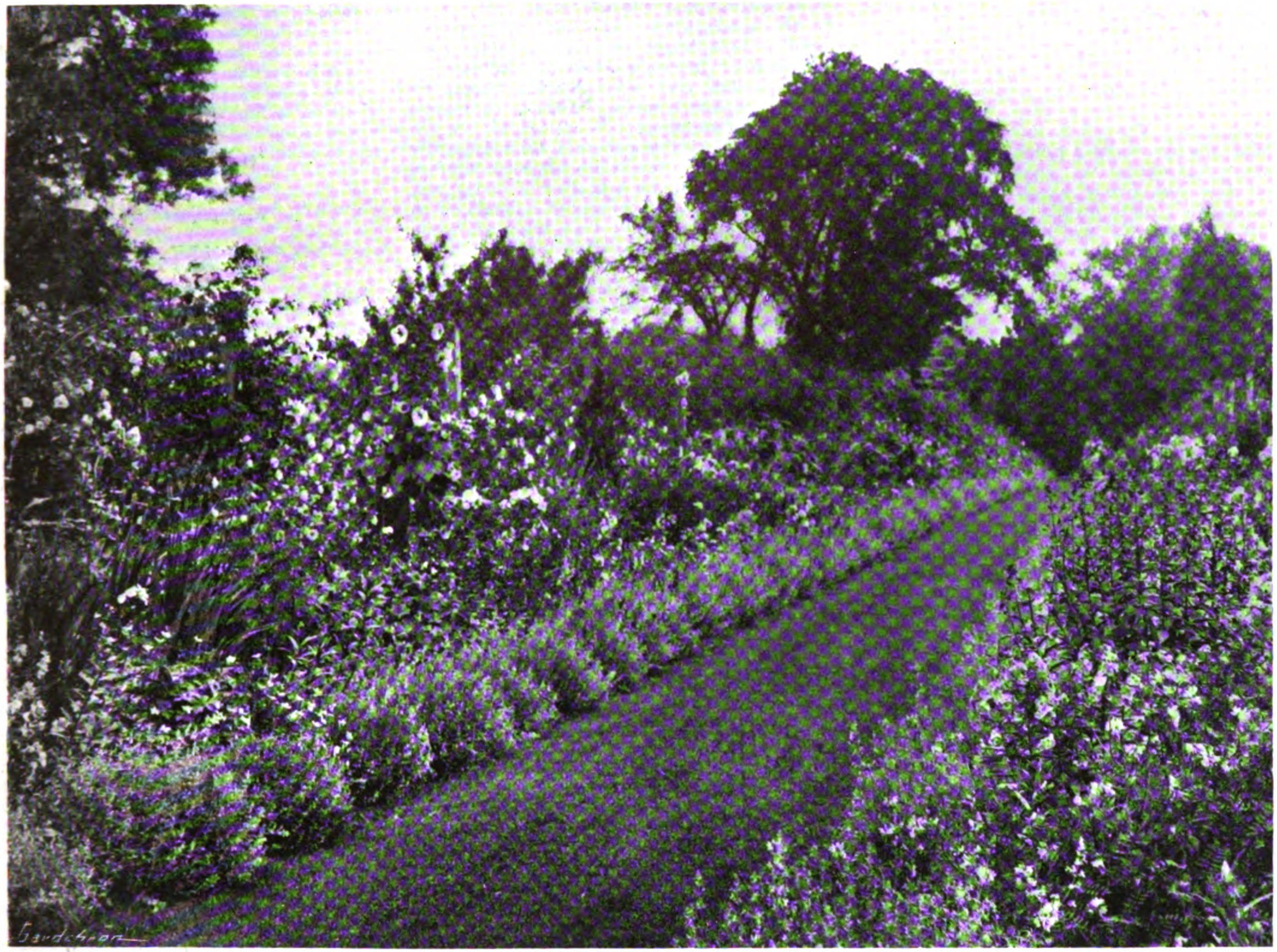


FIG. 29.—MILLWATER: THE HERBACEOUS GARDEN.
(see p. 50).

A TRAVELLER'S OBSERVATIONS.

A PINEAPPLE PLANTATION NEAR HONOLULU.

ONE afternoon in early May I had the privilege of being sent out twenty-three miles from Honolulu in charge of Mr. W. B. Tuttle, to see one of the California Packing Corporation's Pineapple plantations. I could only spare three hours for the inspection, consequently Mr. Tuttle got out in record time, doing forty-five miles an hour in his new six-cylinder Hudson car.

The Corporation's Pineapple plantations extend to 7,000 acres, but I had time only to inspect about one hundred acres. Mr. Tuttle, who is chief superintendent of this immense area, is from Kansas, and studied agriculture in the University of Kentucky before migrating west.

The Pineapples are planted in double rows—the rows are about two feet apart, and the plants in the rows eighteen inches asunder. The distance between the double rows is about four feet, but this is reduced to one half when the plants are in full growth. Nine thousand plants go to the acre, and they begin bearing eighteen months to two years after planting. The first fruiting year the plants yield one fruit each, the second year two, the third year an average of three fruits. The fruits average six pounds each in weight on the best land. The soil is a deep, chocolate-coloured, light volcanic loam, supercharged with manganese. It is prepared for planting by being discked to the depth of twelve inches several times. Between one of the disc-ploughings it is subsoiled to sixteen inches.

The planting process is a most interesting one. Paper a yard wide—resembling a cheap roofing, tarred paper—is laid down where the plants are to be set, and the young plants or suckers are planted in holes made through the paper with a special trowel. The paper keeps down all weed growth in the yard wide it covers; it also retains moisture and develops greater nitrification, Mr. Tuttle said, through keeping the soil bacteria more comfortable and consequently more active. One field I examined was planted in August, 1924, and the paper was still wonderfully fresh and good and serving its purpose. The cost of the paper runs from eighty to one hundred dollars per acre.

Fertilisers are applied at the rate of ten hundredweight per annum, seventy-five per cent. of which is ammonia, the balance being superphosphate and sulphate of potash. Spraying with iron sulphate (four per cent. solution) was in operation. The spray was directed right on the tops of the plants. The foliage must have power to assimilate the iron without which I was assured the plants would die in two years. Mr. Tuttle explained that the plants cannot obtain any iron through their roots, owing to the presence of manganese in the soil which unites with the iron naturally in the soil to form an insoluble ferro-manganese compound, unavailable to the plant.

Weeds are kept down by hand-hoeing, and so long as possible cultivators are at work in the four-foot-way where there is no paper. This weeding on the plantations I saw is thoroughly done, as no weeds at all were present.

Improvement in the stock is made by continuous selection of the best plants for propagation. I queried this, but Mr. Tuttle assured me it was right even though the propagation was by bud selection.

The Planters' Association, through their experts, are endeavouring to raise new varieties from seeds. Some promising seedlings are being tried out, but for general cultivation nothing yet has surpassed the Smooth Cayenne variety, which is a popular Pineapple with growers in Great Britain.

The most serious pest is a nematode which attacks the roots of the plants and destroys them to such an extent that they die off. Its ravages were not deadly on the plantation I visited, but I saw a few affected plants and had them pulled up for examination. Where the trouble is really bad a cover crop of Para grass is planted and if this is left down for a year or two the pest does not multiply, neither does it quite die, but it is held in check sufficiently to warrant replanting the land.

In the height of the season 1,000 to 1,400 tons of fruit per day are sent to the factory in Honolulu by rail straight from the plantations.

THE CANNING FACTORY.

This establishment, also the property of the California Packing Corporation, is situated in the City of Honolulu, and at the height of the season, 1,000 tons or more of Pineapples per day are handled, and 1,000,000 cans are packed in the same time. The fruits, as they come in from the cars, are fed to machines which take off the rinds and tops and bottoms and cut out the cores. They then pass on endless belts to girls who take out any eyes that are left. Then they go into slicing machines. Next, from endless belts, girls with gloved hands take the slices and place the requisite number in each can, which passes on to the syrup filling machine. From there they pass into the exhaust boxes where they are sterilised by steam, next capped and sealed, then cooked, finally cooled, labelled, cased and shipped. Fibre cases were being filled the day I visited the factory, and the cans were being put in the cases, twenty-four in a case, and seven hundred finished cases per machine per hour were going through, and eight machines were working. The whole factory was a marvel of organisation and everywhere the most perfect cleanliness was apparent. The leading brand is the famous "Del Monte," which we know so well in Britain for its high grade.

I was interested in the by-products, if I may call them such. Over 1,000,000 pounds of sugar were recovered from the "refuse," *i.e.*, the peel and cores, and the residue of material after the sugar was recovered, is dried and sold as a cattle food.

To Mr. G. R. Ward, the Hawaiian manager, of this great corporation, I was much indebted. He gave me a good deal of his own time and arranged for the inspection of the plantation. *W. Cuthbertson.*

TRESPASS BY ANIMALS.

To the average man the term "trespass" as applied to animals, generally includes both the driving of the animals on to the land of another person, and also allowing them, by failure to repair boundary fences, to escape into another's premises.

For most practicable purposes, there is hardly ever any need to differentiate between the two forms of wrong, but as a matter of strict law, it would seem that the driving of animals on to the land of another is a true trespass, while allowing them to stray there is a form of nuisance. The difference between trespass and nuisance is that trespass is actionable *per se*, that is, without proof of special damage, whereas in nuisance the damage suffered must be proved in order to claim compensation; since, however, damage usually results from the trespass of animals and few people would want to go to the expense and worry of a law suit, unless they have suffered some loss, for all practical purposes the distinction is not of great importance.

From this it follows that the principles to be applied in the case of straying animals are similar to those governing the escape of things likely to do damage, which are brought and kept by a man on his own land. That is, there is an obligation on the owner of animals which he has brought on to his land to prevent them escaping and doing mischief, and he must keep them at his peril, or he will be answerable for the natural consequences of their escape. The liability, moreover, is an absolute liability, so that whether or not the escape of the animal is due to any negligence on the part of the owner is immaterial, and it has been held in several cases that there is a duty to keep cattle in, and if they get on another person's property it is a trespass, irrespective of any question of negligence.

As regards damage done by the animals for which their owner must make compensation, this is divided into two classes. He is liable in the first place for damage which it is natural for the particular species of animal to do, and secondly, he is liable for the damage which the animal in question has a particular and individual tendency to do.

If the damage done is that which is natural for the species of animal doing it to commit, then the injured party is not burdened with the proof of showing that this is the case. Thus it is a natural propensity of straying cattle to eat green stuffs and tread down a garden, or for poultry to scratch up seed-beds, and in such cases there is no necessity to prove that this is so, or that the owner of the animal was aware of the tendency of the animal or fowl in question to do what it did do.

If, however, the damage done cannot be classed as being that which it is natural for the species to do, then there is cast upon the injured party, the onus of proving that the particular animal was possessed of a tendency to do such damage, and that the owner was aware of this tendency in his animal. This is known as proof of scienter, and great care must be taken to distinguish between this and the former example, where no proof of knowledge or tendency is needed, for in the one case the prosecutor has an excellent chance of winning his action, without having much to prove, while in the other proof of scienter must be brought to satisfy the court, and this is not always an easy matter. Moreover, if the damage is natural to the species of animal, it is no defence for the owner to say that the particular animal had never shown any tendency to do such damage.

There is an exception to the owner's *prima facie* liability, in the case where the trespass is committed from off a highway, by an animal which is being lawfully driven along and escapes on to the adjoining land. In this case in order to make the owner liable, the injured party must prove that there was some negligence on the part of the person in charge of the animal when the accident happened. Thus if cows, which are being driven along the road, come into a garden, the owner must prove that the man in charge of them was not doing his work in a proper manner, or that there were too many animals for him to stand a reasonable chance of controlling them efficiently. This exception seems to be based on the ground that such traffic is a public necessity, and that it is for the public convenience that those whose property abuts on a highway should bear the loss of any injury necessarily resulting from such traffic. *H. A. Sharman.*

(*To be concluded.*)

APIARY NOTES.

BEEKEEPERS have had more than enough of disease during late years. The country has been swept from south to north, and decimated apiaries have marked the track of the scourge. It has been so severe and devastating that many people have given up in despair the attempt to keep bees. Its virulence, however, seemed to have decreased in places, and bee-keepers were encouraged by scientific men to believe that the cause, and even a method of amelioration, had been discovered, and armed with wads of burning sulphur and bottles of chemicals, deliverance seemed to have been achieved.

Now comes the news of more trouble. From Lincolnshire, Norfolk and the eastern counties generally, reports come of a new epidemic. It is even suggested there is a new disease. The effect, anyhow, is plain. Apiaries flourishing last year are utterly wiped out this, One correspondent writes that all his stocks have gone, and no apiary in his neighbourhood has escaped.

It is disheartening. Twice the whole of my apiary has been swept away. It began in one stock, attacked the next, then another, and like a heath fire swept through the lot. Nothing did any good. At the time of the first outbreak the cure was Flavine. That failed. Then Dr. Rennie prescribed, and his prescription was no better. It may be that Acarapis Woodii is the cause, but if so we seem no nearer success in dealing with it than before. Personally, I am not satisfied that the *ultimate* cause is that bug—the proximate, yes! But why does the bug come, what conditions are necessary or antecedent to his coming; etc., etc.? These speculations and questions may not lead far but merely indicate how little is known even yet.

To practical men one thing seems sure, however. All medical opinion, to-day, tends to stress prevention of disease, rather than cure. Even curative treatment follows after this thought. Fortify Nature, give her every chance, leave the work to her, and if she cannot put right the wrong, drugs will not do it.

So it is with bees. Once get Isle of Wight disease established and the end will be as logical as Euclid's propositions. The bees are done for. Nature is impartial. Health is logical, disease is logical. Both seek a natural, that is, a logical conclusion. So if we desire health we must try for logical progressions along healthy lines. Keep the conditions healthy, keep stock vigorous, stamp heavily on the first morbid condition. Better lose one stock of bees quickly than twenty slowly.

This is the only practical advice I can give With hundreds of hives I watch for anything that is unhealthy, and at the first sign down it goes. A sulphur candle is placed above the frames at nightfall in every suspicious case! I never wait for certainty. Nor is it all loss. Some things are clearer to-day in regard to Isle of Wight disease. There is no need to destroy the brood. Take it out of the hive and give it to other colonies, being careful not to give one live bee. If the weather is really warm set the brood aside and shake a frame or two of bees in with it from a healthy stock, and you will have a stock again.

Suffocate every bee of the diseased lot. Do not try to put the candle under the hive and bees. If this is done, the bees will fall down and put the candle out with their innumerable bodies. Sulphur fumes are heavier than air, and if the candle is placed above the frames the fumes will fall to the bottom and the bees cannot put *them* out! Then start to re-queen. Young queens will do much to keep disease away, and old queens nothing. Never keep a queen beyond her second year, and my own ideal is never beyond one full season. Make sure every queen is breeding freely to ensure slabs and slabs of brood. Already, this season, I have used over one hundred queens, and I shall use more than a hundred still. It pays. A queen that cannot keep the honey out of the brood-nest is no good to me, and no good to anyone. Keep plenty of nuclei about, and if a stock shows disease take away its brood, give the brood to one of the nuclei, with a young queen, and destroy the old stock.

This, of course, must not be taken as applicable to brood diseases. All I have said has reference to diseases of adult bees. Two brood diseases are important, and one of them desperate. European Foul Brood is important, but American Foul Brood is desperate. The former can be dealt with adequately by killing the queen, allowing a fortnight, and then re-queening. Queen cells, of course, must be cut out meanwhile. But American Foul Brood is hopeless. The brood must be destroyed *holus bolus*: brood, bees, and combs. And the hive must be either burned or thoroughly scorched with a blow lamp.

To distinguish between these two brood diseases is not easy. Certainly the space at my command does not allow of a clear definition. In European Foul Brood the larva dies and dries: in American Foul Brood the larva dies and sticks—in both cases the putrifying larva becomes rotten and gelatinous, but whereas in the European trouble that stage passes, the decayed larva dries up, and can be removed easily from the cell, in the American Foul Brood it dries fast to the cell wall. Also if a match is pushed into the cell of dead American Foul Brood the decaying matter will draw out after the fashion of glue; in European Foul Brood it will not draw out so far, and snaps off more like partially cooled sealing-wax.

The best I can state, in conclusion, is, that I hope these notes will be, for once, of no interest to any of my readers. *J. Mavie.*

MARKET FRUIT GARDEN.

With a rainfall of 3·06 inch, June greatly exceeded the average for that month in my district. As this followed a wet May, the effect on fruit trees and bushes was very unfavourable. During the early part of June they looked decidedly unhappy, but they improved rapidly under the influence of the warmth and sunshine of the last ten days of the month. Bush fruits in particular took on a better colour and made a lot of growth. Black Currants were ready for market quite at the end of the month, and with me, were a good crop of excellent quality, varieties of the French type being heaviest this season. The demand and price were disappointing considering the general scarcity of Black Currants in nearly all districts. Plums still look well and are not now likely to drop to any extent. Victoria, which seems to be doing best everywhere, will have to be thinned to prevent the breaking of branches. Monarch and Czar also are heavy, and there is a very fair crop of Belle de Louvain. Pears have dropped a good deal, with the exception of the coarser varieties like Fertility and Conference, which are carrying plenty of fruits of good quality.

Apples are a very light crop indeed, particularly the more valuable varieties. I doubt if I have a bushel of Cox's Orange Pippin on the place, and Beauty of Bath is very scarce. Worcester Pearmain is the only dessert variety that is giving a fairly good account of itself. Of the cooking varieties, Early Victoria, Lord Grosvenor and Royal Jubilee are the most promising; but Bramley's has quite a good crop on trees which did not yield heavily last year. For once, the failure of Apples seems to be almost general throughout the country. Here and there a grower has a fair crop; but I cannot hear of any wide district that offers much promise. The reason can hardly be in doubt, for the weather at blooming time was cold and wet, and altogether unfavourable for pollenation. Fortunately, the quality of the fruit is so far satisfactory in most cases. Scab developed badly on the leaves, but it has not at present disfigured the fruits so seriously as in the past two years.

SCAB CONTROL RESULTS.

I have had better results in controlling Apple scab this year than ever before, and really feel that, after some years of trial, I shall get the better of this disease. The credit for this is not mine; the result is due to following out the latest findings of research workers. Spraying with normal Bordeaux mixture in the pink bud stage seems to be the vital point here. Where this application alone was given to those tender varieties, Cox's Orange Pippin and Beauty of Bath, the control is obvious. There is still a little of the disease to be seen on the leaves, but decidedly less than on unsprayed trees. The more robust varieties, notably Worcester Pearmain, received a second spraying after blooming with excess-lime Bordeaux mixture (6-20-100). This undoubtedly did good: but it caused a certain amount of scorching and russeting in some cases, besides being a good deal of trouble to mix and apply on a large scale.

I conclude that, as I expected, no form of Bordeaux mixture is quite safe for use after blooming in my conditions. I tried the East Malling recommendation for tender varieties—lime-sulphur at 1 in 100 with arsenate of lead, on some Cox's Orange Pippin and Beauty of Bath. It did not do the slightest harm, and may, I think, be regarded as a perfectly safe wash. Unfortunately, there will not be enough fruit on those trees to form a reliable conclusion as to whether it has done much good. However, I think I shall use it on all varieties after blooming next year. Scab has been very persistent this season in the wet conditions prevailing. In a dry year the pre-blossom application would probably give me all the control necessary.

APHIS ON BLACK CURRANTS.

This has been a particularly bad season for aphis on Black Currants; and the attack has been most wide-spread. In some cases where not controlled it has practically ruined the crop and badly crippled the bushes. Growers who sprayed in winter with tar-oil wash have reaped a decided benefit. The only alternative is dipping the tips of the shoots in a nicotine and soap insecticide in the early stages of the attack. This is the plan I adopted, and it served me quite well. It was, however, necessary to dip every tip, whether curled or not, as even the apparently healthy leaves were found to have under them a few of the insects. I have seen instances where this dipping method failed to give control, probably because the work was not done thoroughly enough. When the tips are dipped air bubbles are liable to form, and the whole of the under surface may not get wetted. This is obviated if the leaves are squeezed gently with the fingers whilst under the solution. The winter spraying method of control is, however, much more thorough, though, of course, more expensive. As it is possible that aphides can spread "reversion" from bush to bush, the control of aphides is a most important cultural detail.

PLUM PRESIDENT.

In recent notes I mentioned the case of a block of President Plum which for a good many years has not borne a crop because the bloom has always been destroyed by the blossom-wilt form of brown rot disease. Spraying with fungicides has failed to remedy this; but, during the past winter, these trees were sprayed with a tar-oil wash, and I remarked that I should watch the results with interest, to test the claim made for this type of wash that it controls brown rot of Plums. I am glad to say that there is evidence of success. The trees are not carrying a heavy crop, but they have on them far more fruits than they have had for years, and they look much healthier.

As I did not leave any trees unsprayed, the result is not quite conclusive; but it would be a remark—able coincidence if this crop should have been secured without reference to the spraying after so many seasons of failure. Moreover, Plums of all other varieties are less troubled by brown rot than they usually are, and this in a season when there is a lot of the disease about. Tar-oil washes are particularly valuable for Plums, not only because they control leaf-curling aphis, caterpillars and brown rot, but also because they invigorate the trees in some way as seen from the large and plentiful leaves. They cannot, however, prevent the attack of mealy Plum aphis, which comes late in the season from some other host plant, and not from eggs laid on the trees. A careful watch should be kept for the aphides in June and July, and copious spraying with nicotine and soap wash adopted immediately on the appearance of this troublesome pest.

SUMMER PRUNING.

Whilst I was taking part in the recent tour of fruit plantations in Norfolk, organised by the National Farmers' Union, I took the opportunity to visit the county experimental station, chiefly to see the method of summer pruning of Apples adapted from the Lorette system by Mr. H. Goude, horticultural organiser for Norfolk. The trees, which are on Crab stock, have certainly been brought into very early bearing by the treatment, and at the same time have made wonderful development, owing to their energy being concentrated on useful shoots instead of being wasted on misplaced growths that would have to be cut out altogether in the case of ordinary winter pruning. The way in which fruiting spurs are produced in a single season could be seen clearly, for the trees are carrying quite a fair crop even in this unfruitful season.

If this really remarkable result can be repeated with certainty elsewhere, it should lead to a revival of interest in Apples on Crab stock for commercial purposes. On a fruit farm there is much to be said for large trees on Crab stock if the usual long period required to bring such trees into bearing can be reduced in this way.

The method of summer pruning is perfectly simple. All shoots not required to form branches are stopped by pinching so soon as they have made about five leaves, not counting the small leaves at the base. As a result of this pinching one or two shoots develop from the buds in the axils of the leaves. These are carefully rubbed out. On either side of the scar so caused a bud is formed, and this, in many cases, develops into a fruit bud in the same season, and should bear fruit in the following year. Spurs which successfully accomplish this are not pruned in winter. Any that fail to make the desired fruit buds, and push out further shoots instead, have to be shortened in winter to make long spurs. The leading shoots can be tipped in winter or left full length, according to their strength. *Market Grower.*

INTERVARIETAL DIFFERENCES IN THE POTATO.

(*Continued from p.* 33.)

LEAFLET.

THE leaflets manifest some of the same differences as the leaves, the varying characters being: size and shape, colour and condition of surface, the set on midrib, colour of petiole, condition of margin, joining of leaflets, and apparent thickness

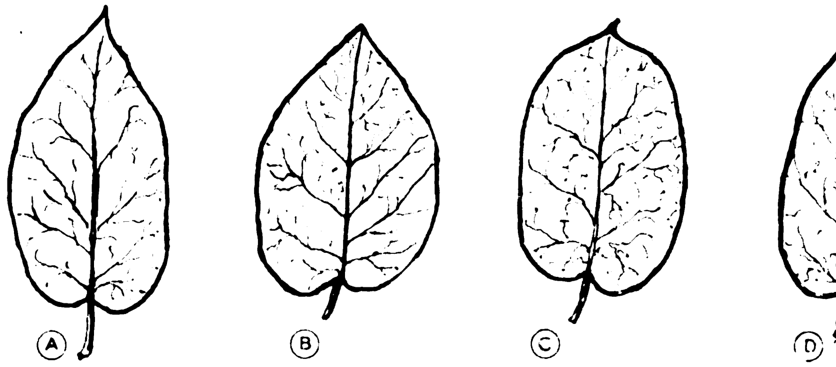


FIG. 30.—POTATO LEAF: TYPES OF LEAFLETS.

A, oval (pointed); B, round; C, oval; D, lanceolate.

(*a*) *Size and Shape.*—The size of leaflets varies greatly with the environment, but for varieties grown under similar conditions it is a fairly constant character. Some varieties, *e.g.*, America, are noted for their large leaflets, and others, *e.g.*, Northern Star, for their small leaflets. All gradations occur; but with the majority of varieties the shape is much more helpful. The shape is difficult to define, and a very important feature of it is the amount and type of tapering; the leaflet tip may be long and drawn out, or short. In these descriptions, reference is made only to the shape of the lateral leaflets of full grown leaves, the terminal being disregarded. A primary difference may be drawn in the way leaflets taper towards the tip; where the tapering begins near the base, the leaflet may be termed lanceolate, *e.g.*, Champion II (Fig. 30D); when the tapering is mainly at the tip it may be termed oval, *e.g.*, International Kidney and Sharpe's Victor (Fig. 30C); and where the tapering begins about the middle the leaflet may be either approximately round, *e.g.*, British Queen and Lochar (Fig. 30B). or oval (pointed) (Fig. 30A). By far the most common is the oval (pointed) type. With the exception of the round class, all types may vary in width. It must be understood, moreover, that even on an individual leaf, shapes may differ, and that as regards any variety one may speak only of an average type.

(*b*) *Colour and Condition of Surface.*—Leaflets may be almost any shade of green, ranging from the light yellow green of Early Market to the dark green of Magnificent. The colour is an extremely important feature, for although it can be altered by manuring, it has always a relative value. Varieties may be classed as having (1) light, (2) medium, and (3) dark green leaflets. Typical varieties in each group are (1) Early Market, Barley Bounty, Sutton's Early Regent and Stirling Castle (2) Witchhill, Katie Glover and Marquis of Bute; and (3) British Queen, International Kidney, Great Scot and Magnificent. Occasionally the young leaves are a much lighter green than the remainder; such for instance give rise to the so-called "sulphury tops" of Lochar, Crusader and Southesk. The surface of the leaflet may be glossy or matt, depending chiefly on the absence or presence of many hairs. British Queen, Mona, King George and Evergood have glossy leaflets, while Ally, Rhoderick Dhu, Early Market and Ben Cruachan have matt leaflets. Some leaflets, *e.g.*, those of the varieties Crusader, Nonesuch and Rocks, are corrugated, *i.e.*, the tissue between the veins is raised much above the level of the veins, giving a rough appearance. This last condition, however, is the exception, and in most varieties it is wanting. A further useful feature of the leaflet is the occurrence of the yellow spotting of Aucuba Mosaic. Some varieties, *e.g.*, Ninety-fold and Fiftyfold, have these spots on practically every plant.

(*c*) *The Set on the Midrib of Leaf.*—The position of the leaflet relative to the midrib of the leaf varies considerably. Leaflets may be rigid or drooping, according to the rigidity of the leaflet petiole. Templar, Champion, President, Kerr's Pink and many other varieties have rigid leaflets, while Royal Kidney, King Edward, King George, Evergood, etc., have drooping leaflets. Fig. 9. p. 13, shows typical rigid leaflets, and Fig. 17, p. 32, typical drooping leaflets. In some varieties, *e.g.*, Great Scot and Arran Victory, it is only the terminal leaflet which is markedly drooping. Fig. 31 illustrates another and extremely common type, where the leaflets rise first above the level of the midrib and then fall, a condition known as "arching," and common in Group 7.

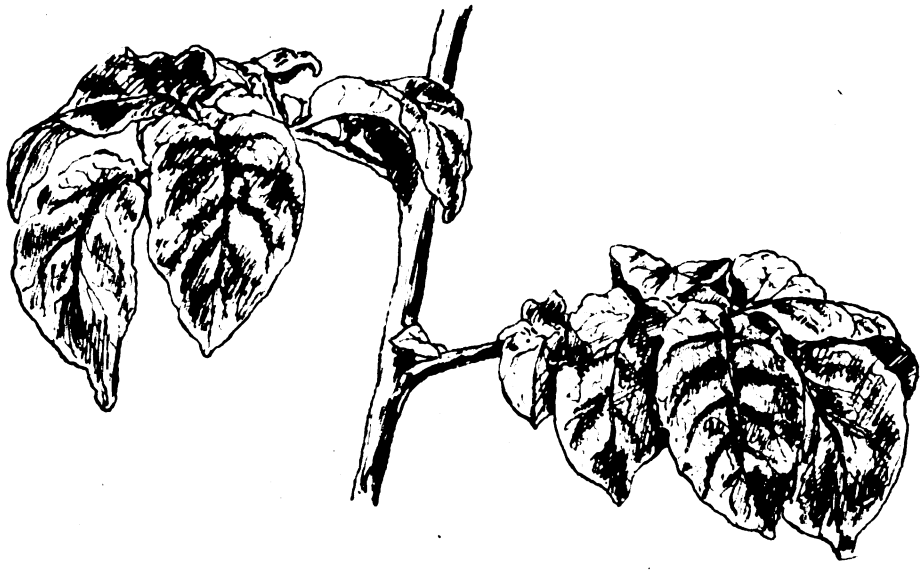


FIG. 31.—POTATO LEAF: SHOWING THE RISE AND FALL OF PRIMARY LEAFLETS FROM THE MIDRIB (ARCHING TYPE). VARIETY CRUSADER.

(*d*). *Colour of Petiole.*—The leaflet petiole may be green or it may be coloured. In some varieties the colouring is chiefly concentrated at the base of the petiole, but in others, and particularly with young leaflets, the colouring may run well up the midrib of the leaflet, *e.g.*, in Majestic.

(*e*) *The Condition of the Leaflet Margin.*—The leaflet may be more or less flat, the margin being normal. However, in many varieties, *e.g.*, Lochar and Sharpe's Express, the margin is turned up slightly, giving what is termed a "cupped" appearance. This phenomenon is found most frequently on varieties which have cordate leaflets. Fig. 32 illustrates another type of leaflet in which the margin is waved. Such leaflets are found on King Edward, Abundance, Arran Chief and many other varieties.

(*f*) *Joined Leaflets.*—Frequently the terminal leaflet is joined with one or both of, the nearest pair of lateral leaflets(Fig. 33). This phenomenon is varietal and is found in Ally, Mein's Early Round, Wonderful, Nonesuch, and King Edward. "Webbing," or the union of the petiole of one of the last pair of leaflets with the midrib, is common in a few varieties, *e.g.*, Early Pink Champion.

(*g*) *Overlapping of Leaflets.*—It has been mentioned previously that the overlapping of leaflets is one of the factors in producing close leaves. It frequently happens, however, that the overlapping is confined to the last pair of leaflets which project forward and overlap the terminal. This may occur even in open leaves, and may be seen in Up-to-Date, Puritan, and Witchhill.

(*h*) *The Thickness.*—Owing to a very slight downward curvature of the leaflet margins, some leaflets appear thicker than others. Apart from that, however, there are distinct differences in the relative thickness of the leaflets, some, such as those of Evergood, being much thicker than those found on other varieties, *e.g.*, Magnum Bonum.

THE ORIGIN OF THE FLOWER STALK.

The origin of the flower stalk is of some importance in differentiating types. In some varieties, the flower stalk is borne in the axil formed by a leaf and a main stem (Fig. 10, p. 15); in other varieties, it is terminal on a side-shoot, and appears to arise on the midrib of a leaf (Fig. 9, p. 13): most varieties show both types in approximately equal numbers.

SPECIAL NOTES ON FOLIAGE IDENTIFICATION.

Disease, Injury and Variations.

The effects of certain Potato diseases frequently modify the normal foliage characteristic and render identification extremely difficult. A few, such as blight, destroy the foliage and render identification impossible; others, such as the virus diseases, (*i.e.*, Leaf Roll, Mosaic, Crinkle, etc.), while not destroying the foliage, obliterate to a large extent the typical appearance of the leaves. On the other hand, in plants affected with virus diseases, the floral parts, although reduced in frequency by mosaic, retain their typical morphological features, and the tubers, although reduced in size, retain their varietal characteristics.

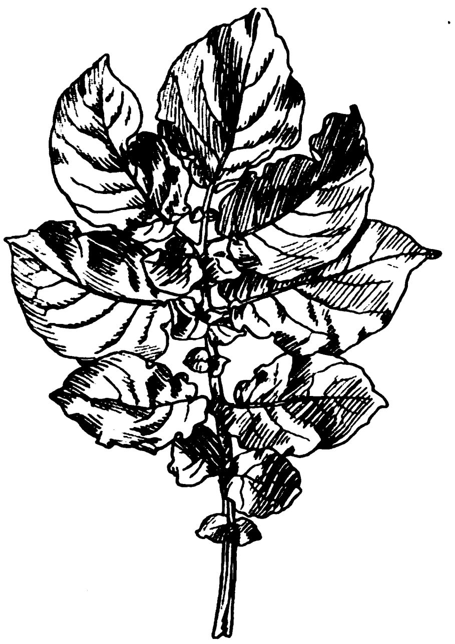


FIG. 32.—POTATO LEAF: SHOWING MUCH MARGINAL WAVINESS. VARIETY ARRAN CHIEF.

Leaf Roll and Blackleg, especially in the early stages of the latter, impart a certain rigidity to the plant and cause upward rolling of the leaflet. Similar manifestations may be seen in plants which have been injured; it is practically impossible at times to tell an injured King George plant from a normal British Queen plant, unless the exciting cause has been noticed. With diseases of the mosaic type there is a mottling of the leaf; crinkle produces a downward curling of the leaf tips; while dwarfing, differing in degree, unevenness of the leaflet surface and marginal waviness are accompanying characters of most virus diseases. It must be noted, however, that the effects of virus diseases are not the same on every variety, and that in consequence the student must know how these particular troubles manifest themselves in each variety. It may be stated, for example, that although diseases of the mosaic type usually cause marginal waviness, some varieties, *e.g.*, Ben Cruachan, which show marginal waviness on healthy plants, lose their character when attacked by such diseases.

Variations and mutations are known to occur on most domestic plants, and the Potato is no exception. Fortunately, mutations would appear to be rare. Nevertheless, there are two types of variations which are of common occurrence, viz., Bolters and Wildings. These variations, however, may be readily recognised in any variety once the characteristic features of the types have been grasped. *T. P. McIntosh, B.Sc.*

(*To be continued.*)

FRUIT GARDEN.

SUMMER PRUNING.

Summer pruning has a beneficial effect on fruit production, for it concentrates the energies of the tree into forming fruit spurs. There is also another advantage, it opens up the centre of the tree to the sun and air thus ensuring the ripening of the fruit and wood, and keeps the tree healthy.

Summer pruning should not be done too early; the last week in July or the first fortnight in August is quite sown enough. The danger of early pruning is that buds on shoots which are shortened start into growth instead of remaining dormant and forming fruit buds. This does not refer to shoots which have been removed entirely; there will be no basal buds on these to develop if the shoot is taken out properly, which may be done at any time of the year These remarks apply only to bush and standard trees of Apples and Plums. Such trees as espaliers are summer-pruned as a matter of course.

With Cherry and Pear trees very little pruning is necessary in the summer beyond thinning out all useless shoots. This is most important in the case of all trees, for even should the grower not believe in summer pruning he needs to remove all superfluous shoots, for while they are growing, the tree is wasting its energy on producing and ripening wood which will have to be cut in winter. These shoots should be removed first, taking care to cut them close to the branch or stem from which they spring. Then the wounds will heal quickly and neatly and fresh growth will not develop. In the case of trees that are well-established, all the summer pruning that is required is the removing of useless shoots, for little is done to such trees at any time. But with young trees more judicious pruning is necessary. Shoots that in the ordinary course of events would form spurs after being pruned should be shortened to five buds. This has the effect of causing the buds at the base to swell and make good fruit buds. It would not be advisable to spur hard back to one or two buds at summer pruning for this would cause the buds at the base to start into growth. With reasonable pruning, the buds at the end of the shortened shoots make very little, if any, new growth. But this does not matter, as they will be spurred back at the winter pruning. The leading shoots should be left unpruned, although in the case of young trees on which they would be cut fairly hard in the winter, they may be stopped by having the ends pinched out. In the winter the trees should be attended to again and shoots that were shortened in the summer, also the leading shoots, spurred back to one or two buds, but this will depend on whether the trees have sufficient strength to withstand this operation. *G. Barton.*

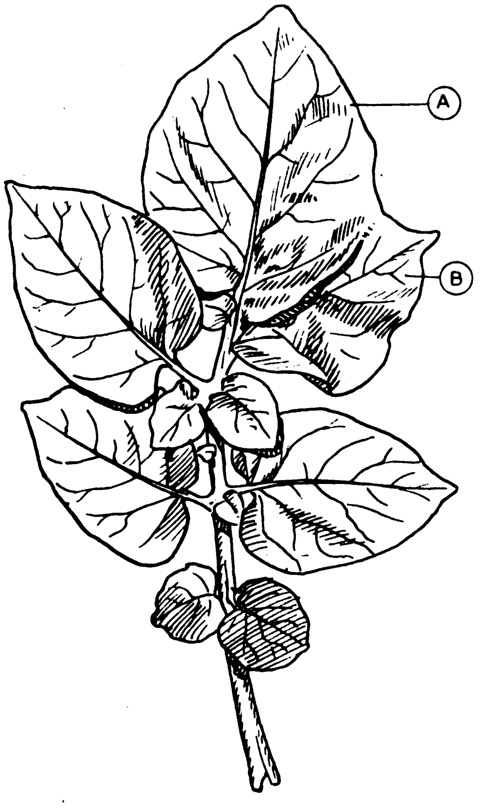


FIG. 33.—POTATO LEAF: SHOWING JOINING OF TERMINAL LEAFLET (A) WITH LATERAL LEAFLET (B). VARIETY ALLY.

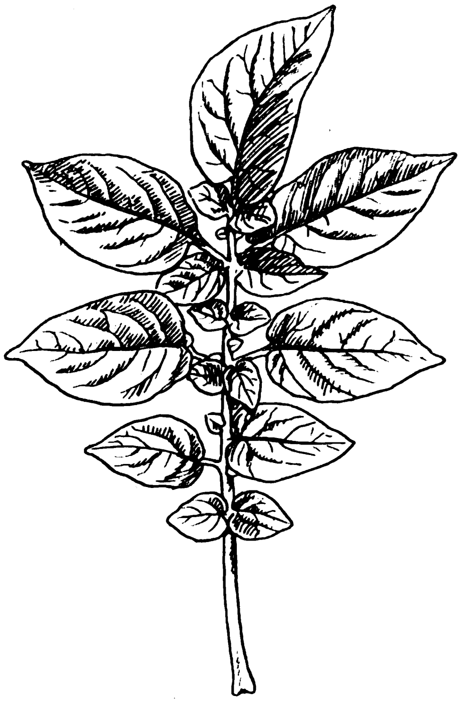


FIG. 34.—POTATO LEAF: TYPICAL OF GROUP 6 (B); REPRESENTING AN INTERMEDIATE TYPE, *i.e.*, NEITHER OPEN NOR CLOSED.

HOME CORRESPONDENCE.

Grapes Scalding.—I find that wrong ideas still prevail as to the cause of what is termed scalding of Grapes. This matter has long ago been cleared up to my satisfaction. For about three weeks during the stoning period, the skin of the berry does not expand. Before that time it has, with well-managed vines, expanded at an average rate of one-thirty-second of an inch in diameter every twenty-four hours. At a later stage there is a sudden stop, and no measurable increase takes place for at least a fortnight. We know that the greater portion of the berry is water, and water, when heated, must expand. If then there is no room for expansion inside the skin something must give way, and I take it that some of the cells collapse and die. If it is possible during this critical period to prevent the temperature rising for any considerable time above 80°, scalding will not occur. Moisture in the atmosphere or border has nothing to do with it, and it does not take place in the early morning, but only after the temperature has been high for a sufficient length of time for the water in the fruit to become expanded. Scalding does not take place while the berry is younger and more tender, unless there is gross neglect, or when the fruit is too near the roof-glass. In such a case scalding may occur, which is quite different. *Wm. Taylor.*

FOREIGN CORRESPONDENCE.

Digitalis ferruginea.—You give (Fig. 228, p. 455) in *The Gardeners' Chronicle* for June 26, an illustration of a plant which seems to be identical with one I found two years ago when botanising near Bagnères de Luchon (Pyrenees), with the Botanic Society of France. It was evidently—and every one of my companions was of the same opinion—a hybrid between Digitalis purpurea and D. lutea. The flowers were tubular and flushed with red and yellow inside, as in the plant you mention (p. 455): both supposed parents were present there. A plant which we grew here some twenty years ago from seeds sent from a German botanic garden under the name of Digitalis hybrida just corresponds to your description. *H. Correvon, Floraire, Chêne-Bourg, Geneva.*

PUBLIC PARKS AND GARDENS.

THE town of Marlow has purchased Court Garden, which has a frontage to the River Thames, for use as a public park, to commemorate the one-hundredth birthday of General Sir George W. A. Higginson. This new open space will be known in future as Higginson Park.

AT a meeting held in Brighton recently, under the presidency of Lord Leconfield, the Lord Lieutenant of Sussex, it was decided to form a Sussex Playing Fields Association. It was felt that elementary school children should enjoy equal privileges for physical development with the pupils of the higher schools. At present, it was stated, only ten per cent. of the children in the county were able to enjoy organised games. The Mayor of Brighton said that his town had better provision, but he would support the movement in the interests of other towns in the county.

AT a meeting held on Wednesday, June 16, the Swansea Town Council agreed to purchase the ground known as Bishop's Wood, adjoining the beautiful Caswell Bay, on the Bristol Channel. The area is seventeen acres, and contains a large house which it is intended to use for refreshment purposes.

THE Manchester Parks Committee has received the offer of an extremely useful and valuable gift from Mr. R. H. G. Tatton, of Wythenshawe. The offer was conveyed to the Committee in a letter from Mr. J. H. Hall, the agent of the Wythenshawe estate, which is to be acquired by the Corporation, intimating that Mr. Tatton's attention had been drawn to the fact that in his library at Wythenshawe there was a number of valuable botanical and horticultural works which he had pleasure in presenting to the Committee. The collection consists of forty or fifty rare volumes, including the original works of Linnaeus.

GREAT success attended the recent cricket week which took place in Southchurch Park, Southend, and Mr. Arthur Keeling, the superintendent, was heartily congratulated by the players for the excellent pitch he had prepared for the play. In the vicinity of the tent occupied by the Mayor were beds of particularly fine flowers in the old carpet-bedding style; one bed presented the words "Success to our Cricket Week," and another "The Mayor and Corporation Welcome You." The lettering was done in Echeverias, the background being of Cordylines, Eucalyptus, Acacias, Hydrangeas, scarlet Pelargoniums, Kochias and Irisine. The ground work was made with bronze and yellow Alternantheras, Mentha, green and yellow Mesembryanthemums and dark and silver Tradescantia. The dot plants used were Begonias, Irisine and Echeveria metallica. Lobelia, Sutton's Basket, scarlet Begonias, Tradescantia and Sedums were introduced amongst the stonework which outlined the beds.

SOCIETIES.

MOSSPARK (GLASGOW) HORTICULTURAL.

THE members of this young and enterprising Society held the first of their summer outings recently, when a company numbering over one hundred visited Pollok House, the residence of Sir John Stirling-Maxwell, and spent a profitable afternoon in the private gardens. Mr. A. D. MacTavish conducted the visitors through the grounds, and Sir John and Lady Stirling-Maxwell, who joined the party, contributed to the enjoyment of the guests by describing many of the rare and interesting subjects in cultivation.

At the outset some time was devoted to an inspection of the wall garden which serves as a background to the lawn, which is formed on a lower level in front of the mansion. The stone work is richly clothed with various sorts of Aethionemas, Campanulas, Aubrietias, Dianthus, Alyssums, Veronicas, Umbellularia californica, Potentilla nitida, Gentiana acaulis, G. Farreri, Corylopsis spicata, a beautiful and uncommon plant, Saxifraga pyramidalis, etc.

In the kitchen garden a group of seedling Delphiniums attracted attention by reason of the profusion of bloom. The border on the upper level extends to a length of one hundred yards, and it is planted with a choice collection of border flowers. In a wood many species of flowering shrubs find a permanent and suitable home.

Sir John has made a life-long study of Rhododendrons, and in picturesque woodland extending over nine acres, is to be seen one of the finest collections in the country. The species, varieties, and hybrids have been planted so far as possible in groups.

In the nursery adjoining the wood is a collection of seedling Oaks, Buddleia globosa in flower, numerous rows of Veronicas and a magnificent hedge of Lonicera nitida.

One of the peculiar attractions of the Pollok estate is the circular part known as the mound, surmounted by a large Beech tree of unique formation. The shrubs occupying the ground space are to be removed so as to provide accommodation for Rhododendrons. The view which opens up from the high elevation is grand and covers a wide expanse of landscape with Gleniffer Briars as a background. It also overlooks those sections of the garden situated on the lower level.

The enthusiast discovered many rare and interesting plants in the long walk where Cotoneasters and Berberis are largely represented, together with Ilex, Pyrus, Cystus, Heuchera, Magnolias, Tricuspidaria lanceolata, and a fine specimen of Rosa Moyesii, ten feet high and smothered in bloom.

SOCIÉTÉ D'HORTICULTURE ET DES JARDINS OUVRIERS DE LA RÉGION DU NORD.

THIS French Society celebrated its fiftieth anniversary by holding a great floral fete at Valenciennes.

The show opened on Saturday, June 26; Madame Philippe de Vilmorin was President and Sir William Lawrence Vice-President of the Jury-Supérieur.

The exhibitors were seriously handicapped by the north-east winds and by morning frosts, and consequently those exhibits which consisted of Roses, Fuchsias, etc., bedded out in the open air were very backward. In this section, M. ALPHONSE BRAECKMAN (Wetteren), exhibited a collection of some two hundred and fifty shrubs.

The exhibits under cover were staged in a large double tent, a portion being divided off for Orchids etc. Messrs. VILMORIN-ANDRIEUX ET CIE occupied a large area in the centre of the tent with admirably arranged banks of annuals grown in pots, the middle of the group consisting of eight columns of Sweet Peas; Viscarias, flowers little grown in England, were used in large quantities and in all shades. Among other awards, this group received the Gold Medal of the Royal Horticultural Society. Alongside this exhibit the same firm showed a large group of vegetables, but this exhibit fell short, both as to arrangement and as to quality of the groups we are accustomed to see in England.

Messrs. MOSER ET FILS, of Versailles, staged a large formal garden of Polyantha Roses. Some eight or ten varieties were shown and all plants were grown *à point*. This most meritorious exhibit also received the Gold Medal of the Royal Horticultural Society.

The Exposition Collective des Horticulteurs Bruxellois comprised magnificent Hydrangeas, Gloxinias, Palms and greenhouse plants. Hydrangeas, indeed, were more largely shown than any other plant.

FLANDRIA, Bruges, occupied a large space with very finely-grown Palms, Crotons, Aphelandras, Roupala (syn. Rhopala) and other similar plants. This group, with its sombre green tints, had a mournful appearance, which was enhanced by the proximity of an immense carpet bed entirely composed of Cauliflowers and Carrots.

An extensive collection of Roses was shown by M. REYOND, of Lyons; the flowers were richly-coloured but were very small and badly shown.

The only exhibit of fruit was that of M. PARENT, of Rueil. The small group contained magnificent fruits of Hale's Early Peach, and Early Rivers' Nectarine.

Orchids were well shown by a number of Belgian firms. The best group was put up by an amateur, DOCTEUR G. BALLION, of Ghent, and this included fine Miltonias and hybrid Cypripediums, while a trade group shown by M. LEON PERRIS excelled in blue Vandas. Dr. BALLION received the third Gold Medal of the Royal Horticultural Society.

Next to the Orchids came a very fine display of Anthuriums, shown by Mr. VAN DE PUTTE, of Merrelbeke.

M. FÉRARD, of Paris, erected in the corner of one of the tents an immense cliff at the foot of which ran a mountain torrent; this was spanned by a fallen Birch trunk, while in the bed of the stream Cotoneasters and Calla Elliottiana appeared equally happy.

An amusing feature of the show was a series of gaily furnished living rooms, which were used in connection with a competition for the floral decoration of the home.

Pomological and Rose Conferences were held during the show. The Society has some 80,000 members and is the largest and wealthiest society in France; it is, however, not exclusively horticultural, as we understand the word, but is co-operative for the purchase and sale of seeds, etc., at wholesale rates.

READING AND DISTRICT GARDENERS'.

SOME seventy members of this Association recently visited Mr. Thomas Carlile's Loddon Nurseries, Twyford, Berkshire, where was seen a magnificent array of over fifty thousand Delphiniums in three hundred varieties. Among the varieties which attracted special attention was Evelyn Cole, Mrs. Thomas Carlile, Blue Boy, F. W. Smith, Betty, Jean Taylor, Star of Langport and Elsa. Geums and Lupins are also grown on a large scale by Mr. Carlile.

In a Sweet Pea competition held on the same evening some splendid blooms were staged, and the judges awards were as follow:—

Class 1, open: Three vases, three distinct varieties: first, Mr. A. W. GOWER, Calcot Grange Gardens; second, Mr. A. H. Dow, Calcot Park Gardens; third, Mr. W. Turnham, Greenlands Gardens, Henley-on-Thames.

Class 2, open: One vase, mixed colours: first, Mr. H. J. Goodchild, Queen Anne's School Gardens, Caversham.

Class 3, single-handed gardeners: One vase, mixed colours: first, Mr. A. G. BANBURY, Rust Hall Gardens, Reading; second, Mr. F. HAINES, Calcot Hanger Gardens.

Class 4, Amateurs: One vase, mixed colours: first, Mr. H. J. RICHENS, Tilehurst; second, Mr.

R. G. Taylor, Reading; third, Mr. R. Buller, Reading.

Mr. A. E. Beaumont, The Gardens, Copse House, Earley, showed a basket of splendid fruits of Lloyd George Raspberry.

At the close of the ramble the visitors were hospitably entertained by Mr. Carlile, to whom a hearty vote of thanks was tendered for the opportunity given for spending such an instructive and enjoyable evening in his grounds.

ROYAL HORTICULTURAL.

July 13.—The usual fortnightly meeting was held in the Society's Hall, Vincent Square, Westminster, on Tuesday last. The exhibition was smaller than those held earlier in the year, and the decreased attendance was indicative of the holiday season. The National Carnation and Picotee Society's annual exhibition was held in conjunction with the R.H.S. show, and even with the Carnations the Hall was not nearly filled. There were only three groups of Orchids, and only one award was made by the Orchid Committee to a novelty.

The most imposing exhibit was a group of Sweet Peas shown by Messrs. Dobbie and Co., and there were also notable collections of Hydrangeas, Water-lilies, Roses, and hardy border flowers.

The Floral Committee granted eleven awards of Merit to various subjects, and two Certificates of Preliminary Commendation.

The Fruit and Vegetable Committee was attended by only a very few members, and this body made no award. The weather was very warm, and the atmosphere in the Hall somewhat oppressive. The use of white muslin spread under the roof failed to break the force of the sun's rays effectively, and the material was placed too near to the glass. A coloured fabric —soft blue or light green, such as is employed in the glass house at Olympia where the gardens are shown—would have been more effective.

Orchid Committee.

Present; Sir Jeremiah Colman, Bart. (Chairman), Mr. C. J. Lucas, Mr. H. T. Pitt, Mr. A. Dye, Mr. J. E. Shill, Mr. A. McBean, Mr. J. Cowan, Mr. H. Smith, Mr. R. Thwaites, Mr. E. R. Ashton, Mr. Stuart Low, Mr. F. K. Sander and Mr. Gurney Wilson (Hon. Secretary).

AWARD OF MERIT.

Laelio-Cattleya Lucretia var. Milly.—The flowers of this fine variety have sulphur-yellow petals and sepals, and a beautiful plum-purple lip, a remarkable contrast in tones. The flower is of fine form, large size and good substance; the edges of all the segments are beautifully waved. Shown by Messrs. Black and Flory.

CULTURAL COMMENDATION.

This award was made to a splendidly-grown and well-flowered specimen of Laelio-Cattleya Aphrodite, Broadland's variety, shown by Mr. E. Ashton (gr. Mr. C. V. Kent). There were three spikes carrying collectively eleven fine blooms.

GROUPS.

Messrs. Sanders made an extremely pretty group, the ground of green moss and many delicate Adiantum Ferns interspersed amongst the Orchids, adding greatly to the effect. The group was dominated by a magnificent plant of Dendrobium thyrsifolium with twelve splendid inflorescences of the pretty orange and white flowers. Arching inflorescences of Oncidium oblongatum, O. Harrisonianum, O. pulvinatum and O. carthaginense overhung the dwarfer subjects which included Dendrobium atro-violaceum, Cypripedium Curtisii Sanderae, C. niveum, C. Godefroyae and Brasso-Cattleya Miranda var. Rêve d'Or.

Messrs. Cowan and Co., Southgate, showed many well-grown plants of a variety of Orchids, each plant staged on a stand that admitted of critical examination of its merits. In the centre was a grand plant of Cattleya gigas Melaine, and another fine plant of the large-flowered type was Laelio-Cattleya Minos. The plants of Cochlioda Noezliana and of Odontioda Chantecler in flower showed how much of the beauty of the latter Orchid is derived from the former. Excellent plants of Cypripedium Maudiae magnificum, C. bingleyense Chorltonii, C. St. Alban, Odontoglossum eximium, Miltonia vexillaria, Aerides affine, Cattleya vesta and Oncidium pulvinatum were also exhibited.

Messrs. Charlesworth and Co., Haywards Heath, had a small but select exhibit in which we noticed Orchids of great merit. The Odontoglossums were perhaps the most striking subjects, a plant of Odm. Lilian (Dora × Empress of India) having a superb spike of the violet-lavender flowers on a white ground; O. Tagus, O. Royal Ascot, O. Norvic, O. plinius and O. Beryl were also finely-flowered. A charming little plant of Miltonia William Pitt with two blooms, Cattleya Mendelii alba var. The Queen, Cattleya Dupreana and Cypripedium Godefroyae var. leucochilum are also deserving of mention.

Floral Committee.

Present: Section A.—Mr. Henry B. May (in the chair), Mr. J. F. McLeod, Mr. Arthur Turner, Mrs. E. M. Wightman, Mr. H. J. Jones, Mr. F. Allan, Mr. J. M. Bridgeford, Mr. A. Vasey, Mr. H. R. Darlington, Mr. G. W. Leak, Mr. James B. Riding, Mr. W. B. Gingell, Mr. D. B. Crane, Mr. J. T. West, Mrs. Helen Lindsay-Smith, Lady Beatrix Stanley, Mr. W. H. Page, Mr. Wm. Howe and Mr. W. P. Thomson.

Section B.—Mr. Gerald W. E. Loder (in the chair), Mr. E. A. Bowles, Mr. G. Reuthe, Mr. E. H. Wilding, Mr. A. Bedford, Mr. L. R. Russell, Mr. T. Hay, Mr. R. C. Notcutt, Mr. Charles T. Musgrave, Mr. R. W. Wallace, Mr. Amos Perry, Mr. Clarence Elliott and Sir William Lawrence.

AWARDS OF MERIT.

Abelia Schumannii.—A graceful pot plant of this shrub was shown. It appeared to be not quite so free-flowering as most of the better-known species, but probably an older shrub than that shown would be more floriferous. It bears ovate, opposite leaves and pale lilac flowers at the ends of the lateral twigs. Shown by J. Preston, Esq., The Warren, Hayes, Kent.

Campanula Donald Thurston.—This erect, herbaceous perennial is much of the C. Telham Beauty type, though the flowers are considerably larger and of a pleasing pale Cambridge blue shade of colour. Shown by Mr. F. L. Thurston.

Deutzia tawainensis.—This is a free-flowering shrub with much of the general appearance of D. scabra (better known in gardens as D. crenata). The flowers are borne in long terminal racemes which terminate in a short, leafy twig. The calyx is a mealy purple colour, the petals are white and the abundant stamens are bright yellow. The lanceolate leaves are sage green above and a pale pea green below. Shown by Gerald Loder, Esq.

Heeria rosea elegans.—A well-grown pan of a prostrate sub-shrub bearing plenty of rosy-coloured flowers was shown. The plant is generally considered to be more tender than the appearance of this fine specimen suggested. The illustration of Heeria rosea, under the old name of Heterocentrum mexicanum, in *Bot. Mag.*, 5166, depicts an erect, suffruticose plant, distinct, except in the individual flowers, from that which now received an award. Shown by J. Preston, Esq.

Hemerocallis Margaret Perry.—This is an excellent variety of the Day Lily. The flowers are large, of a tawny crimson and buff colour, with a golden centre and a narrow bar of the same colour running along the middle of each segment. Shown by Mr. Amos Perry.

Nymphaea amabilis.—Enormous, Tulip-shaped flowers of bright red colour were shown. We understand that this, one of the more recent Latour-Marliac varieties, opens salmon-white on the first day, and passes, through rose, to the rich colour as shown, which is deeper in the centre of the flowers. This, and the two following were shown by Lionel de Rothschild, Esq., Exbury, Southampton.

N. Attraction.—Another large, hardy Water-lily of rich colouring. The petals are flaked with white at the tips, and the white sepals are streaked with garnet colour.

N. tulipiformis.—This variety bears a decided resemblance to N. amabilis and the flowers are equally large. The petals are a rich red shade and the stamens are stained a dark mahogany colour.

Rose Frank Reader.—A handsome, fully-double H.T. variety of large size, good exhibition shape and pleasantly scented. The blooms are of creamy yellow colour with a deeper shade at the bases of the substantial, recurving petals, and there is a glow of apricot in the heart of the bloom. Shown by Messrs. D. Prior and Son.

Rose Jack Hobbs.—A hybrid Polyantha Rose which produces trusses of flowers much larger than is usual in this type. The blooms are semi-double, over three inches across and of a bright crimson colour which passes to rose. Shown by Messrs. D. Prior and Son.

Tritonia Lyalina.—This handsome bulbous plant is said to have been raised by Miss Willmott some twenty years ago, and the same batch of seedlings gave T. Prince of Orange. We believe that Miss Willmott named the variety in question Warley Salmon; the flowers are of a very bright salmon-pink colour. Shown by E. A. Bowles, Esq.

The Clay Cup offered for the best Rose not in commerce before 1926 and possessing good form and colour with the true old Rose scent, was awarded to the variety Dame Edith Helen, shown by Messrs. Alex. Dickson and Sons. This handsome, clear pink H.T. variety received the N.R.S. Certificate of Merit at the Summer Show at Regent's Park on July 3, 1925.

OTHER NOVELTIES.

Certificates of Preliminary Commendation were given to Salvia Bulleyana, a shrubby, erect-growing plant, bearing yellow flowers which have a small, maroon-coloured lip; this was shown by Mr. Amos Perry; and to a Mutisia near M. ilicifolia, though with larger petals, of a soft rose-pink shade.

Messrs. Sutton and Sons, Reading, submitted Achimenes Pink Beauty, a useful, decorative greenhouse plant, Dimorphotheca Sunrise, of soft salmon colour, and D. Prince of Orange, of clear yellow colour, and it was stated that both varieties are "fixed." Coreopsis Bedding Queen, of deep yellow colour, appears to be a desirable perennial, either for the border or for cut flowers.

GROUPS.

A magnificent collection of Sweet Peas was arranged with great taste by Messrs. Dobbie and Co. Prominence was given to several novelties, including Gleneagles, a beautiful lavender with a suggestion of blue; Chieftain, the fine mauve which recently received the N.S.P.S. Award of Merit; Patience, soft salmon-cerise; Mary Pickford, cream-pink flushed with rose; and Magnet, a showy cream-pink of deeper colouring. Of the many older varieties, Charming, clear rosy-cerise, and Grenadier, of dazzling scarlet colour, were also of great value.

Roses were largely shown by several growers who set out their handsome collections in the best exhibition style. Under the influence of the great heat the blooms opened widely and made a glorious display. Messrs. Alex. Dickson and Sons included large stands of Isobel, Lady Worthington Evans, Richard E. West, Betty Uprichard, Mabel Morse and Emma Wright. Messrs. Chaplin Bros. had good examples of Mrs. Henry Bowles, Mabel Morse, Mermaid, Innocence and Betty Hulton. Messrs. F. Cant and Co. set up twenty-four varieties of decorative Roses in good style, and included Covent Garden, The Queen Alexandra Rose, Betty Uprichard and Ethel Dickson. The Rev. J. H. Pemberton had vases of I. Zingari, Isobel, Nur Mahal and Ruth. Messrs. Laxton Bros. had a showy exhibit of Bedford Crimson, the richly-coloured variety which won the Clay Cup for fragrance in 1924; and Mr. W. E. B. Archer showed a large quantity of Dainty Bess, his lovely single, pale salmon-pink variety.

No doubt in view of the show of the National Carnation and Picotee Society, greenhouse

Carnations were extensively shown. Mr. C. Engelmann had large vases of Laddie, Topsy, Rouge, Janet, Jazz and other free-flowering varieties. In addition to a good collection of border varieties, Messrs. Allwood Bros. set up a large collection of rich perpetual-flowering varieties such as Coral Glow, Enchantress Supreme, Triumph, Topsy and Mikado. Messrs. W. H. Cutbush and Son had a fine group of Malmaison Carnations Princess of Wales, and the rich red Malmaison Maggie Hodgson.

Japanese Irises were freely shown by Messrs. W. H. Rogers and Sons. The massed blooms of Purple Patch and Snowdrift, for example, were very effective. They also showed Eryngium Violetta and Bupthalmum speciosum cordifolium. A well-filled little rock garden, exhibited by Messrs. L. R. Russell, Ltd., contained floriferous batches of Sisyrinchium bermudianum, Oenothera riparia, Betonica spicata rosea, and several useful Fuchsias. Messrs. M. Prichard and Sons filled a corner of the hall with a lovely profusion of border flowers; herbaceous Phloxes, Kniphofias, Astilbes and Geums were the chief genera.

In a low rock garden, Mr. F. G. Wood planted several dwarf-growing Musks, including the varieties Whitecroft, scarlet; Croftonianus, pale pink, and Burnetii, orange. Mr. R. C. Notcutt showed vases of Phlox, Gaillardias, Romneya hybrida and Alstroemerias. In his customary exhibit, Mr. G. Reuthe showed Lilium pardalinum, L. testaceum and L. Martagon. A large space was filled by Messrs B. Ladhams, Ltd., with a generous profusion of border flowers. In the centre there was a mass of Lavatera Olbia rosea, flanked by Iris Rose Queen, Coreopsis imbricata and various Campanulas.

In the centre of the hall Mr. Amos Perry had a valuable and interesting pool of hardy Water-lilies with groups of Reeds, Grasses and herbaceous flowers. The Water-lilies included Nymphaea Meteore, N. gloriosa and N. lucida, of rich colours, N. Gladstoniana, large white flowers, and N. chromatella, large, pale chrome-yellow. Messrs. R. Tucker and Son had a small collection of alpines. Messrs. Waterer, Sons and Crisp exhibited Oenothera Fraseri, Phlox, Erythraea Massonii, Coreopsis and Geums.

A large collection of his splendid Hydrangeas was set out by Mr. H. J. Jones. His chief varieties were Mrs. H. J. Jones, Elmar and Matador, of rich pink colour; Blue Prince, Goliath and La Marne, of good blue colour. Mr. C. H. Herbert set up an admirable collection of border Pinks. The very best were Mrs. Giffard Woolley, of deep blush colour; Bridesmaid, blush; Prince of Wales, rose; and Juno, rich crimson. Mr. William Yandell had a good collection of the best Violas, which included Oxhill Purple, Blue King, J. V. MacDonald, Blue Gown and Lizzie Stevenson.

Fruit and Vegetable Committee.

Present: Mr. C. G. A. Nix (Chairman), Mr. J. Cheal, Mr. E. A. Bunyard, Mr. A. N. Rawes, Mr. E. Neal, Mr. J. Harrison, Mr. E. Laxton and Mr. George F. Tinley.

A new Cherry named Eric Perfection was shown by Mr. F. T. Mattocks, of Station Road, Rainham, Kent. It was, however, considered too much like Governor Wood to be an acquisition.

Sir William Lawrence sent some interesting uncommon vegetables, including Lettuce Genezzana, of the Trocadero type; Finocchio, or the Italian Fennel; Lotus tetragonolobus; dark green Gombo; a variety of Hibiscus edulis; some dwarf curled Celery, and an example of the pale-coloured Naples Cabbage Lettuce.

Messrs. Laxton Bros. showed three new Gooseberries, including Bedford Red, a variety of upright habit, of the type of Lancashire Lad; and Green Gem, which received an award of Merit last year. They also showed a new Red Currant as "No. 1," which is considered equal in every respect to Perfection, and superior in the greater strength of the wood; Perfection has the grave defect of extreme brittleness, so that a high wind results in a number of broken twigs, which the new variety does not appear to possess.

WOLVERHAMPTON FLORAL FÊTE.

The thirty-fourth Floral Fête, held at Wolverhampton, on July 13, 14 and 15 in the pretty West Park, was a great horticultural success. There were 713 entries, or 113 more than last year, and the exhibits filled four large marquees. The general arrangements were excellent, more space than usual being allowed for visitors, especially in the largest tent, where the larger groups were; a similar space in front of the big Rose groups would be a great advantage as the displays now rise to a goodly height and cannot be viewed adequately from close quarters. The weather was gloriously fine on the opening day, judging was finished in excellent time and there was a good attendance of visitors.

The Silver Challenge Cup offered for the best competitive or non-competitive exhibit of herbaceous flowers was awarded to Messrs. Bees, Ltd., for the fine display of Delphiniums which won first prize in their special class.

The Silver Challenge Cup for the best non-competitive exhibit was won by Messrs. Bakers with a large and attractive display of hardy flowers.

Groups and Plants.

There were three competitors in the class for a group of plants arranged for effect on a space of twenty-five feet by twelve feet where the awards were £40, £30 and £20 respectively. First prize was won by Messrs. Jas. Cypher and Sons with a particularly pleasing, elegant and bright arrangement, wherein Lilium longiflorum, L. Henryi, L. speciosum, Humea elegans, and Francoa ramosa rose gracefully above brilliant Codiaeums, Dracaenas, Clerodendron fallax, Cattleyas, Miltonias, Odontoglossums, Cypripediums, Tydeas and Anthuriums, while small Rex Begonias and Nertera depressa made a pleasing front line. The background was in the form of a double arch furnished with Palms, Codiaeums, Caladiums and Selaginella. Second prize was won by Mr. W. A. Holmes, Chesterfield, in whose group the tall, spiral-leaved Codiaeums were the great feature, these rising over a pleasing groundwork of Ixoras, dwarf, highly-coloured, broad-leaved Codiaeums, Eucharis, Anthuriums and Cattleyas. The third award was made in favour of Sir G. Kenrick (gr. Mr. J. Macdonald), Edgbaston, Birmingham, whose Codiaeums were very attractive.

The best display of foliage plants arranged for effect was the exhibit set up by Messrs. James Cypher and Sons, who made free use of Codiaeums, Nandina domestica, Phyllanthus nivosus, Caladiums, Palms and Ferns; second Sir G. H. Kenrick.

Messrs. James Cypher and Sons secured the first prize for a decorative display of plants and flowers on a space 6 feet by 4 feet, and made a pleasing group of Codiaeums, Cypripediums, Carnations and Nandina domestica; second, Mr. W. A. Holmes; third, Mr. F. A. Sankey.

Mr. J. L. Swanson exhibited the best double-sided group of plants and had a pleasing exhibit in which Humeas, Clarkias, Fuchsias, Nemesias, Francoa and Codiaeums were used effectively; second, Mr. F. H. Reeves, Penn; third, Mr. G. Mason.

Messrs. J. Cypher and Sons were the only exhibitors of fifteen plants, eight to be in bloom. The best of the set were the large Hydrangeas, Dracaena Victoria, Clerodendron Thompsonianum Crassula coccinea, Pandanus Veitchii and Statice intermedia.

Messrs. C. Engelmann and Son had the only exhibit in the class for a display of cut Carnations arranged on a space twelve feet by four feet and they thoroughly deserved the first prize awarded them. Among many good varieties and fine flowers admirably arranged, we noted Mauve Circe and Coral Glow.

Amateurs' collections of tuberous Begonias were good and made a fine show; the leading award was won by Mr. W. J. Westwood (who was awarded *The Gardeners' Chronicle* Medal). Mr. J. A. Hampton and Mr. J. H. Justice following as named.

Major Thompson showed the finest group of Begonias in the open section and was followed in order, as placed, by Alderman Bantock (gr. Mr. G. Woodham), Wolverhampton, and Mr. G. Mason.

In the class for a group of one kind of flowering plant F. Sankey, Esq. (gr. Mr. R. Maybury), Wolverhampton, led with well-grown Heliotropes; Messrs. J. Cypher and Sons coming second with Hydrangeas, and J. L. Swanson, Esq. (gr. Mr. F. W. Cooling), third, also with Hydrangeas. For a dozen flowering plants of one kind Major Thompson led with well-grown Fuchias; second, Mr. F. A. Sankey, with Gloxinias.

Hardy Flowers.

The class for an arrangement of hardy border flowers, on a space twenty-five feet by seven feet brought fewer competitors than usual. Of the two entrants Messrs. Bees, Ltd., Liverpool, were easy first prize-winners with a grand display in which the flowers were arranged naturally, without crowding, and included Delphiniums, Eremuri, Campanulas, Lilium candidum, L. Henryi, Phloxes, Alstroemerias, Gaillardias and other attractive subjects; second, Messrs. Harkness and Son.

Messrs. Bees had by far the finest collection of Delphiniums, their spikes being large and full and staged in large numbers on a wide space; the arrangement was good and the culture very high; second, Messrs. W. Hewitt, Solihull.

Lupins were not effective, being past their best; the better of two sets came from Messrs. Harkness and Son; Mr. F. Drew, Walsall, coming second.

The best group of hardy annuals, contributed by Mr. T. H. Justice, won the premier award and it consisted of Antirrhinums, Salpiglossis, Chrysanthemums, Nemesias, Petunias, Nigella, Lavatera, Tagetes and Alyssum; second, Mr. J. L. Swanson. Although Antirrhinums were allowed we should have objected to the use of Lobelias in this class as being neither hardy nor annual.

Antirrhinums were rather past their best and the best of four collections came from Mr. F. A Sankey, with W. B. Vernon, Esq. (gr. Mr. S. Egar) Wolverhampton, second, and H. S. Pratt, Esq. (gr. Mr. E. H. Burdon), Tettenhall, third.

G. Mason, Esq. (gr. Mr. F. C. Clark), Penn led in the gardeners' class for six kinds of hardy flowers; Mr. W. Pemberton, Bromsgrove, second.

The class for a display of border Carnations and Picotees was not wholly satisfactory although there was no cause for complaint in the case of the first prize exhibit from Mr. W. Woolman, who had grand flowers of Bookham Rose and Mrs. J. Murray; second, Mr. C. White, Walsall; third, Messrs. J. B. Grove and Son, who had far too many obtrusive labels.

Roses.

The big Rose class provided a gorgeously beautiful bank of colour and fragrance. In the leading class competitors had to make a display on a space twenty-four feet by four feet. The chief award was won by Messrs. Gunn and Sons, Olton, with a brilliant exhibit wherein the columns of Independence Day, Mme. E. Herriot, Betty Uprichard, Clarice Goodacre, Mabel Morse, and Mrs. H. Morse were very fine, while the big baskets of the Queen Alexandra, Lady Inchiquin and Los Angeles were fine features, as was the front arch of Shot Silk. Second prize was awarded to Messrs. W. Lowe and Sons, Beeston, third to Mr. C. Gregory, Chilwell, and fourth to Mr. T. Robinson, Nottingham.

Messrs. Gunn and Sons were also successful in the class for a collection of Roses arranged on a space twelve by four feet, but the hot weather appeared to have affected all the flowers in this class; second, Messrs. English and Son, Gloucester; third, Messrs. Horton Bros., Wolverhampton.

Roses on boards were good but became almost full blown during the heat of the morning. Mr. C. Gregory led for thirty-six blooms distinct, his set including fine examples of Capt. K. Stewart and Mrs. H. Darlington; second, Mr. H. Drew; third, Mr. J. Mattock, Headington. The last-named exhibitor led for five baskets of cut Roses with a handsome set of Mrs. H. Bowles, Marcia Stanhope, Lady Inchiquin, Los Angeles and Golden Emblem; second, Mr. H. Drew; third, Messrs. English and Son.

Mr. J. Mattock and Mr. H. Drew were placed equal second for a dozen new Roses. Mr. C. Gregory led for a basket of a dark Rose and also for a basket of a light Rose, showing Mrs. Chas. Lamplough. The same competitor was also most successful in a class for eighteen vases of perpetual-flowering Roses, with Mr. J. Mattock second, and Mr. H. Drew third.

Sweet Peas.

The leading award for eighteen vases of Sweet Peas, distinct, was made to Mr. A. Leigh, Stoke-on-Trent, for fine examples of Picture, Wizard, Ivory Picture, Youth, Elegance, Valentine, Powerscourt, Grenadier, Constance Hinton, Hebe, W. J. Unwin, Royal Purple, Mammoth, Matchless, Mauve Beauty, Charming, and Warrior; second Sir R. Baker (gr. Mr. A. E. Usher), Ranston, Blandford; third, Mr. H. Pratt. Sir Randolph Barker led for twelve bunches of Sweet Peas, and showed lovely blooms of Wild Rose, Wizard, Crusader, Austin Frederick and Mrs. A. Hitchcock; second, Mr. R. Challiner, Batterby, Crewe; third, Captain W. Garratt Thorpe, Hucclecote, Gloucester

Sir Randolph Baker, Mr. A. H. Hickman, Cookley, and Mr. J. Mellor, Compton, won prizes in this order for six bunches of Sweet Peas.

In the Gardeners' and Amateurs' Class for twelve vases of Sweet Peas the prizes were won in order of mention, by Mr. R. Challinor, Sir Randolph Baker and Capt. Garratt-Thorpe.

Table Decorations.

Seven competed in the open class for a table decoration, and here the premier award was won by Sir G. H. Kenrick with a pretty design of Gloriosa superba, Renanthera Imschootiana and a few white Streptocarpus, but the especially pleasing part was the central, drooping screen of slender trails of Ceropegia, Oncidium flexuosum and Selaginella; second, Mr. W. R. Reynolds, Tettenhall, with a simple and pleasing arrangement of drooping and semperflorens Begonias; third, Mr. C. Holder, Birmingham, with pink and mauve Sweet Peas; fourth, Mr. E. R. Lupton, Birmingham, with Calceolarias, Gloriosas, Tydeas and Francoa ramosa.

Competition was keen in the Amatours' Class for a table decoration of any kinds of flowers, Mrs. W. H. Reynolds winning with a dainty arrangement of Ophelia Roses; second, Mrs. T. J. Barden, Compton, with pink and blush Sweet Peas; third, Miss D. Holder, with orange-coloured Dimorphothecas; fourth, Mr. S. Smith, Bromsgrove.

In the local class for a table decoration, Miss D. Holder scored with Coreopsis and Alstroemerias; second, Mrs. W. E. Ball, with Alstroemerias and Erigerons; third, Miss Nora Lee, with Iceland Poppies, Alstroemerias and Eschscholtzias.

Vegetables.

In the open class for eight kinds of vegetables Mr. Hickman, Mr. Adams and Mr. Pratt secured the awards in the order given. In the open class for a collection of six distinct kinds of vegetables, first prize was won by A. H. Hickman, Esq. (gr. Mr. J. F. Parkin), Cookley, with capital Peas, Potatos, Carrots, Onions, Tomatos and Cauliflowers; second, Mr. P. Adams; third, Mr. F. Hudman, Great Barr.

Mr. W. H. Gwillian showed the best collection of four vegetables. Mr. J. Miller, Compton, taking second place.

The best Amateurs' collection of vegetables was shown by Mr. W. Pemberton, Bromsgrove, who won in a close competition with Mr. S. Adderley, second.

In Messrs. Sutton's class for six kinds of vegetables the awards were made in favour of Mr. A. H. Hickman, W. B. Vernon, Esq. (gr. Mr. S. Egar), Wolverhampton; and Mr. P. Adams, as named.

The best display of garden produce was made by The Tettenhall and District Allotment Association, who set up excellent Cauliflowers, Peas, Potatos, Gooseberries, Carrots, Sweet Peas, etc.; second, Mr. C. Hughes, Cannock.

Medal Awards.

The following awards were made to non-competitive exhibits:—

Large Gold Medal.—To Messrs. E. Webb and Sons, for fruits, flowers and vegetables.

Gold Medal.—To Messrs. W. H. Simpson and Sons, for Delphiniums; to the Wolverhampton Corporation, for a group of pot plants; to Messrs. Dobbie and Co., for Roses; and to Messrs. Blackmore and Langdon, for Begonias.

Silver Medal.—To Messrs. Maxwell and Beale, for a rock garden; to Mr. W. Sydenham, for hardy flowers; to Messrs. Jarman and Co., for Lupins, Delphiniums and Sweet Sultans; and to Messrs. Isaac House and Son, for Seabious.

NATIONAL CARNATION AND PICOTEE.

An exhibition of border Carnations was held by the National Carnation Society in conjunction with the R.H.S. meeting at Vincent Square, Westminster, on the 13th inst. All sections of the flowers were represented except the old bizarres and flakes of the florist, though two classes were allotted to them. The exhibition was a good one compared with that of last year. All the flowers are now shown with long stems with Carnation foliage, instead of on boards and with paper collars. Everything is now far more natural about the show, though most of the flowers had been grown in pots under glass. There were classes, however, for flowers grown out of doors. Needless to state the flowers shown by nurserymen were the best; but even in the classes for amateurs there were many splendid blooms. The Picotees were not numerous, the very beautiful, heavy-edged types being most favoured. The Society is to hold another show at the Carpenters Hall, Throgmorton Avenue, London Wall, on Wednesday the 21st inst.

Mr. James Douglas, Great Bookham, Surrey, secured the leading award for six varieties of self Carnations, showing Delicosa, Rhoderick Dhu, Mrs. Peter Vlasto, Peter, Asphodel and Bookham Scarlet. Messrs. Lowe and Gibson, Crawley, were a good second with Peach Blossom, Gordon Douglas, Elaine, Mary Murray, etc. Messrs. Seymour and Anderson, Nazeing, were placed third with some fine flowers.

Mr. James Douglas again took the lead for six fancy Carnations, with yellow on buff ground. Ben More, Linkman, Flamingo and Pasquin were really fine. He was followed by Messrs. Seymour and Anderson with smaller flowers in some cases. Messrs. Lowe and Gibson were third.

For six fancy white ground varieties the premier honour again went to Mr. James Douglas, who had fine vases of a Seedling, Mr. James Fairlie, Flora McIvor, Mrs. Seymour, etc. Messrs. Seymour and Anderson followed with fine flowers but shorter stems. The third award went to Messrs. Lowe and Gibson.

Mr. James Douglas kept the lead again for six varieties of Clove-scented Carnations, and they certainly were very fragrant, including King of Cloves, White Clove, Salmon Clove, Wonder Clove, Steerforth and Coral Clove. Messrs. Lowe and Gibson took a step forward in this case with two at least of the above varieties. The third prize was awarded to Messrs. Seymour and Anderson.

Messrs. Lowe and Gibson had the best three fancy varieties other than white or yellow ground. The premier fancy was Sam Griffiths, shot with scarlet on a heliotrope ground. Messrs. Seymour and Anderson were a close second.

Amateurs' Division.

Mr. E. Charrington, Limpsfield, had the best three white ground Picotees, which were certainly charming, all three being broad edged.

Mr. James Fairlie, Acton, came first for three buff or yellow ground fancies with very fine flowers indeed. Miss Shiffner, Lewes, was a good second, but for effect her blooms were spoiled by low vases. Mr. E. Charrington was third. Viceroy was the premier in this class, shown by Miss Shiffner.

Miss Shiffner was to the front for three white ground fancies named John Stobart, Mrs. Charrington (the Premier in this class), and W. P. Owen. She was followed by Mr. Jas. Fairlie, and Mrs. Hambro, Forest Row, in this order.

Miss Shiffner was the only exhibitor of yellow ground Picotees, two of which were really charming.

Mrs. Hambro took the lead for three self-coloured varieties, Fragrance and Pearl Clove being highly fragrant and handsome. She was followed by Miss Shiffner and Mr. E. Charrington, in this order.

Miss Shiffner had the best three blooms of a white variety, showing Purity; Mrs. Hambro was second, and Mr. E. Charrington, third.

The best yellow self was shown by Miss Shiffner, who had Mary Murray in first-class form. Mrs. Hambro was second with Cecilia, which has size but not form. Mr. Jas. Fairlie was third.

For a buff or terra-cotta self Miss Shiffner took the lead with her old namesake Elizabeth Shiffner. Mrs. Hambro followed.

Miss Shiffner had the best exhibit in the class for a red or scarlet self, showing Grenadier. Mr. James Fairlie was a good second; and Mr. E. Charrington was third.

For a dark red or maroon self, Miss Shiffner led with massive blooms of Roderick Dhu. Mr. Jas. Fairlie was again second.

For a pink or rose self Miss Shiffner again excelled with Mrs. R. T. Smith, a very charming pink variety. Mrs. Hambro was a good second, and Mr. E. Charrington was third.

Miss Shiffner had the best self of any colour not mentioned above, showing The Grey Douglas in grand form. Mrs. Hambro was second with the same variety; and Mr. James Fairlie was third with Yvonne Thomas.

For a fancy Carnation other than white or yellow ground Miss Shiffner took the lead with Mr. A. Brotherston; Mrs. Hambro followed; and Mr. J. J. Keen, Southampton, was third with a handsome fancy, but small.

Mr. G. E. Hart, Norbury, excelled in the class for two self varieties open to amateurs who do not grow more than 300 plants. Mr. F. Palmer, Stratford, followed with smaller blooms.

Mr. Hart also had the best yellow ground fancies, beating Mr. F. Palmer, whose flowers were too much alike.

Mr. Hart was the only exhibitor of yellow ground Picotees, taking first prize. For three selfs, dissimilar, he won second prize. He had the best white ground fancies and was followed by Mr. F. Palmer.

Mr. Hart also won the first prizes for a yellow ground fancy and for three clove-scented varieties.

In the class for blooms grown in the open border, Mr. E. A. Wilkinson, Southampton, had the best vase of selfs in Bookham Rose; Mr. E. G. Lowe, Cricklewood, was second, and Mr. A. G. Robshaw, third. The latter was first for three yellow ground fancies, and was followed by Mr. G. E. Hart and Mr. S. H. Gregg, Bowes Park, in this order.

Mr. G. E. Hart excelled for white ground fancies, showing well. Mr. S. H. Gregg followed.

For a vase of Clove-scented varieties Mr. E. G. Lowe was awarded the first prize.

First-Class Certificates.

Christine Prior.—This is a white ground Fancy Carnation, with very broad, incurved petals, finely lined or pencilled with heliotrope. Shown by Mr. G. D. Murray.

Mrs. Peter Vlasto.—The bloom is large, pure white, perfectly smooth on the margin, and very highly refined. It is a self. Shown by Mr. James Douglas.

Flamingo.—The bloom is of large size with a good calyx. The variety is a buff-yellow ground Fancy, the colour being scarlet on buff-yellow. Shown by Mr. James Douglas.

Flora McIvor.—A white ground Fancy Carnation of great size and beautifully defined with rose-purple on a clear white ground. The blooms are large and the calyx excellent. Shown by Mr. James Douglas.

Award of Merit.

Ida Gray.—The blooms are of refined form with a good calyx. The colour is soft heliotrope shot or striped with rose. Shown by Mr. G. D. Murray.

GUILDFORD AND DISTRICT GARDENERS'.

By kind permission of the Duke of Sutherland, about eighty members of the Association visited Sutton Place, on Wednesday, June 30. The day was chosen to afford an opportunity to members who are not free to attend the Saturday outings.

Sutton Place is one of the most famous mansions in Surrey, and apart from the gardens has many points of historical and architectural interest beyond the scope of these brief notes. Within the house are treasures gathered from many lands; costly tapestries, Romney portraits, and a magnificent library. The mansion is said to be unique, inasmuch as it was the first Great house of a purely domestic character, built without the defence of wall or moat, in Surrey.

Sutton Place is situated in a richly-timbered park, on rising ground, the front of the house facing towards Guildford, four miles distant. From the front lawn a fine view is obtained, looking on to the gap cut in the chalk ridge by the River Wey. Immediately to the west the ridge rises steeply again and continues as The Hog's Back to Farnham; to the east is Pewley Hill, with the Semaphore House (one of the old Semaphore Stations) crowning the height.

In recent years, considerable extensions were made to the gardens by Lord and Lady Northcliffe, the previous owners, but improvements continue to be carried out by the Duke of Sutherland. Within the last few months an enclosed garden has been created into an open-air bathing pool. There is a wide grass margin, and flower borders all in blue.

Another extremely pretty water scene is a Lily pool, with a quantity of flowering Nymphaeas in many colours, the whole within a set hedge of clipped Yew. Hydrangeas in big tubs are very effective. The Rose beds, the houses and all within them, and woodland walks, all made their appeal, but the writer was most charmed by the flower borders flanking the front lawn. Here are many beds of summer flowers, brilliant in rich and varied colours and tasteful grouping, the predominating favourites being Stocks, Antirrhinums, Delphiniums and Nemesias in thousands. Mr. Kirkwood, the gardener, conducted the visitors around these delightful scenes, and Mr. Olds, in the absence of the President, expressed in well-chosen terms the thanks and appreciation of the visitors.

LAW NOTES.

CONTRAVENTION OF THE SEED ACT.

At Haddington Sheriff's Court on Monday, June 28, the Tranent Co-operative Society was charged with having, on March 15, at their premises in Tranent (1) exposed a packet of Carrot seed for sale without displaying a statement in writing as to the variety, purity and germination of the seed; and (2) made a false statement as to the purity of the seed to two inspectors of the Board of Agriculture by representing that it was conforming to the Government standard of germination, whereas on examination it was found to be twenty-six per cent. below the standard as prescribed in the Seeds Act. A plea of guilty was tendered to the first charge, and exception was taken to the second one on the ground that the statement to the two inspectors should have been made in writing. Sheriff Jameson upheld the objection. An agent, in mitigation of the first offence, stated that the Society usually purchased its seeds from a firm of seed merchants in Edinburgh, and had on this occasion run out of the seeds required. Seeds, however, were procured from their own market garden, and this was put into packets and exposed for sale. The Society was ignorant of the provisions of the Act, but steps were immediately taken to comply with it when attention was called to the omission. The Sheriff imposed a fine of £2.

SEED POTATO PROSECUTION.

At Glasgow Sheriff Court, on Thursday, July 8, Robert Lyburn, Potato merchant, Germiston Street, was charged with two offences under the Seeds (Scotland) Regulations, 1922. He admitted having failed to give a statement in writing to a farmer of Deeping, England, specifying the class of ten tons of seed Potatos which he had sold to him and was convicted on evidence of having stated that the Potatos had been dressed to one-and-a-quarter and two-and-a-quarter when over thirty-seven hundredweight did not conform to that statement. The accused explained that the first charge was the result merely of a slight omission in his invoice. It was stated in evidence that he bought ten tons of Majestic seed from another merchant, and that they were consigned direct to England from a farm at Greenloaning, where they were grown. On their arrival it was found that a quantity of the Potatos would not go through the two-and-a quarter mesh riddle. In his own evidence Lyburn stated that the class of the consignment had never been challenged. He himself did not see the lot, and he had to rely on servants. Replying to a question, he said that seed Potatos were not seen in many cases by the person who acted as middleman. Sheriff Robertson imposed a fine of £3.

TRADE NOTE.

A MECHANICAL HEDGE-CLIPPER.

The makers of the "Little Wonder" hedge clipper (see Fig. 35) claim that it will clip a hedge of any kind very much quicker and much neater than by any other method. This implement received the Award of Merit of the Royal Horticultural Society in December, 1924, after trial at Wisley. The machine is made in three sizes, the thirty-inch size weighing ten pounds; the forty-inch size weighing twelve pounds; and the sixty-inch size weighing fifteen pounds, and requiring two men to operate it. The maker is Mr. J. Hansen, Astor House, Aldwych, London, W.C.2., from whom all particulars may be obtained.

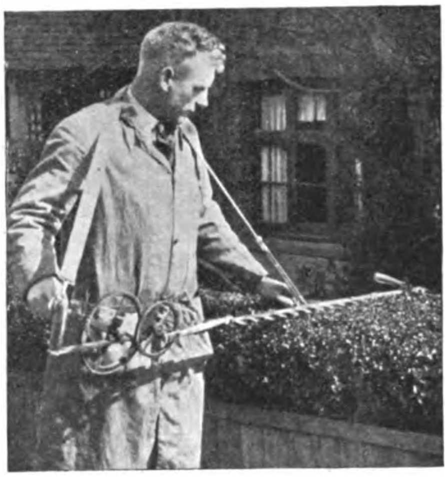


FIG. 35.—LITTLE WONDER HEDGE CLIPPER.

SCHEDULE RECEIVED.

Royal Horticultural Society of Perthshire.—Grand floral exhibition to be held in the City Halls, Perth, on Wednesday and Thursday, August 18 and 19.—Secretary, Mr. James G. Young, 59, South Methven Street, Perth.

ANSWERS TO CORRESPONDENTS.

Asparagus Unhealthy.—*W. T. L.* The plants are attacked by Aspidistus camelliae, or Asparagus Scale insect. Use nicotine vapour, when the young scales are just hatching, as now, if in a glasshouse. Repeat the vapour if and when more of the insects can be seen hatching out from the scales on the stem.

Gardener's Notice and Cottage.—*W. E. F.* If you are a head gardener you are entitled to a month's notice, and if you are an under-gardener you are, in the absence of any local custom to the contrary, probably entitled to the same notice, but there has been no decision in the High Court yet on the point. There have, however, been at least two decisions by County Court judges to that effect, but such decisions are not binding on other judges. You should give up your cottage at the end of the notice, and if you do not your employer would have to take ejectment proceedings in the local County Court. It would then be for the judge to use his discretion as to whether he should make an order for immediate possession. If you cannot find accommodation elsewhere the judge might decline to make such an order, especially if there is another empty cottage on the estate, but you would probably have to pay the costs.

Grapes Marked and Splitting.—*A. B.* The brown marking and shrivelling is not due to a fungus or insect pest that can be found on the specimens sent. It may be due to sun scorch or some error in treatment of the vines.

Grape Spot.—*F. F.; A. E. J.; and W.G.* The berries are affected with spot disease caused by the fungus Gloeosporium ampelophagum. Spray with liver of sulphur at a strength of half-an-ounce in two gallons of water, or dust flowers of sulphur on the leaves and bunches, and again at an interval of ten days. Next winter, when the vines are dormant, spray the rods with iron sulphate in solution.

Names of Plants.—*R. E.* 1, Iris sibirica; 2, Rhododendron Mrs. Tom Agnew; 3, R. Vauban; 4, R. ponticum seedling; 5, R. ponticum var. lancifolium; 6, Philadelphus Virginal; 7, Iris xiphioides variety (Spanish Iris). *W. E. B.* 1 and 2, Rhododendron Baroness Bonsover; 3, R. James Naysmith; 4, R. Minnie; 5, Lychnis Viscaria; 6, Polemonium caeruleum var. dissectum. *F. E. W.* 1, Iris foetidissima; 2, Geranium Endresii. *F. J., Huyton.* 1, Lychnis Viscaria flore pleno; 2, Escallonia rubra.

Narcissi Foliage Dying.—*J. O.* The bulbs of the Narcissi sent are healthy. It is possible that the fungus which was found on the dead foliage carries on the disease from one season to the next, and in view of this, we should advise you to collect all dead foliage from the bed with a rake and burn the collected material. A dressing of lime might help to secure more rapid decomposition of any leaves remaining in the soil near the surface.

Peach Alexander.—*C. E. L.* Alexander Peach is a very early variety and does well in many gardens, but is not quite so trustworthy as many others. As other varieties do so well in the same house it may be the stock of your tree that is the cause of its failure, or more probably lack of lime in the soil. Examine the roots early in the autumn, use more old lime rubble in the compost, with a good sprinkling of bone meal. Give one or two sprinklings of freshly slaked lime during the growing season to assist in the formation of the fruit stones. It is too late to apply carbonate of lime to be of any value during the present season.

Communications Received.—A. C.—H. C.—G. W.—R. L.—Miss H.—T. J. H.—F. S.—W. H. M.—C. B.—M. L.—W. M.—J. C. B.—W. F. W.—J. O'D.—R. L.

THE Gardeners' Chronicle

No. 2065.—SATURDAY, JULY 24, 1926.

CONTENTS.

- Aberdeen, notes from ... 72
- Alpine garden—
  - Cistus Silver Pink... 67
  - Helichrysum bellidioides 67
- Bagatelle Rose trials adjourned 63
- Bog garden—
  - Anemone elongata... 67
  - Myosotis Welwitschii 67
- Botrytis and Narcissus 68
- Bulb garden—
  - Tigridia Pavonia ... 69
- Catalogues, preservation of trade ... 63
- Colour scales 75
- Cypresses, the swamp 70
- Escallonia C. F. Ball... 76
- Forestry—
  - Trees and forestry in Derbyshire ... 69
- French Chrysanthemum Congress at Blois 62
- Fruit garden—
  - Grafting the Apple on the Willow ... 76
- Fruit register—
  - Apple White Transparent 76
- "Gardeners' Chronicle" seventy - five years ago 63
- Glasnevin, notes from 71
- Hailstorm in North Devon, severe ... 63
- Hardy flower border—
  - Border Carnations... 67
  - Urospermum Dalechampii 67
- Indoor plants—
  - Clerodendron Thomsonae 67
  - Ficus macrophylla... 67
  - Lavatera trimestris 67
- Mammoth Cave, Kentucky 63
- Mesembryanthemum 72
- Nursery notes.—
  - Messrs. J. Cypher and Sons... ... 75
- Obituary—
  - Beckett, G. H. ... 78
  - Beaucantin, M. Raoul 78
  - Ross, Sir John ... 78
  - Vert, F. J. 78
  - Viger, M. Albert ... 78
- Potato, intervarietal differences in the ... 73
- Rose garden—
  - Roses of superior merit 66
- Rose garden, a national 66
- Scholarship entrance examination result at Swanley... ... 63
- Scottish fruit crops ... 63
- Societies—
  - Guildford and District Gardeners'... 76
  - Hanley Park Show... 78
  - Kent County and Soft Fruit Show... 78
  - Royal Gardeners' Orphan Fund ... 77
  - Scottish National Sweet Pea, Rose and Carnation ... 77
- Trees and shrubs—
  - Clianthus puniceus magnificus ... 66
  - Corokea macrocarpa 66
  - Hedysarum multijugum 66
  - Rhododendron viscosum 66
- Vegetable Dyes, African 61
- Vegetable garden—
  - Removing exhausted crops ... 76
  - Spinach Beet ... 76
- Week's work, the ... 64
- Wisley, notes from ... 71

ILLUSTRATIONS.

Abelia Schumannii 63
Arctostaphylos diversifolia 67
Cheiridopsis Roodiae 73
Cordyline Banksii flowering at Glasnevin 70
Lysimachia punctata at Wisley... 65
Narcissus bulbs attacked by botrytis 68, 69
Nicholls, Mr. G. J., portrait of 62
Oxalis magellanica at Glasnevin 72
Potato inflorescence 74
Senecio Smithii at Glasnevin 71

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last fifty years at Greenwich 64°.

ACTUAL TEMPERATURE—
The Gardeners' Chronicle Office, 5, Tavistock Street, Covent Garden, London, Wednesday, July 21, 10 a.m. Bar. 29.5. Temp. 62°. Weather, Dull.

African Vegetable Dyes.

WHOEVER has travelled even on the fringes of African deserts is proud to return with souvenirs in the form of leather or woollen goods, brightly dyed. The secrets of the processes whereby the bright colours of these articles are produced are divulged by Dr. J. M. Dalziel in a most interesting article contributed to the *Bulletin of Miscellaneous Information* (No. 6, 1926) of the Royal Gardens, Kew. According to the author, the original "morocco" leather of the Moors in Spain and North Africa owes its colour not to the vegetable, but to the animal kingdom; but a very similar dyed leather is produced by the Hausas, and indeed throughout Nigeria native goat leather is usually dyed red. The source of the dye is a red variety of Sorghum guineense, or, as is becoming more frequent, aniline dyes. The leaf sheaths, and it may be the stems, of this Sorghum are tinged with a deep red purple colour, and the variety used in the dyeing is now known as S. guineense var. robustum, Stapf. The grass is cultivated almost exclusively as a dye stuff, and may be found in African markets in small bundles consisting of four to six sheaths. To use the dyes, wood ashes from Anogeissus Schimperi, Hochst., are steeped in water. The red leaf-sheaths of Sorghum previously pulverised in a wooden mortar are placed in the dye-pot, and a little of the wood-ash solution is added. The tanned hide, dressed with oil (Ground-nut oil or Palm oil) is immersed and rinsed in water acidulated with lime juice to heighten the colour, then it is dried and rubbed. The pigment of the Sorghum known as sorghorubin is easily extracted by cold alcohol or by boiling water, and when so extracted is garnet-red, changing to orange-red on acidulation. Red dyes from species of Baphia and Pterocarpus are stated to be also used in Nigeria for dyeing leather but whether this be so or no, they are applied frequently to dye woollen fabrics, and as body paints. A variety of Cotton plant, Gossypium arboreum var. sanguineum, is also used in dyeing—the crushed leaves with lime juice yield a red dye for cotton thread. Yellow leather dyes used in Africa are, according to Dr. Dalziel, of three kinds. One is obtained from the Asclepiad Cryptolepis sanguinolenta; another is Turmeric (Curcuma longa); and a third is obtained from the leaves of Anogeissus Schimperi. The Asclepiad Cryptolepis is a woody climber with a distribution from Gambia to Angola. Its fresh sap is orange-red, and both root and stem show bright yellow in section. It is interesting to learn from Dr. Dalziel that the plant, under the name of Pergularia sanguinolenta, was raised in the R.H.S. Gardens at Chiswick from seeds brought from Sierra Leone by G. Don in 1822. To use the dye material, roots of Cryptolepis and the fruit of the Tamarind (Tamarindus indica), are associated, the latter apparently purifying the colour of the dye. When Turmeric is employed, the dyeing process is yet more simple, the only other ingredient used being lime juice. Where Anogeissus Schimperi is employed, a decoction of the leaves is made in cold water, native earth or clay being added as a mordant. Those who visit Kew may see in Museum No. 1 a goat-skin dyed with this material. The process is interesting in that the earth used contains aluminium sulphate; so that it provides an instance of how discoveries of mordants, made, no doubt, by accident, lead to advances in the dyer's art. The green leathers owe their colours generally to copper salts, but shades of green are sometimes produced by a mixture of vegetable dyes—indigo from Lonchocarpus cyanescens, and a yellow dye (Turmeric, or the root of Cochlospermum tinctorium). Black dyes often have iron for their base, but Dr. Dalziel states that, in North Dahomey, leather is stained black by using the wine-red flowers of the Cotton plant already mentioned.

Horticultural Produce (Sales on Commission) Bill.—Lord Bledisloe, Parliamentary Secretary of the Ministry of Agriculture, in moving the second reading of the Horticultural Produce (Sales on Commission) Bill, on Tuesday last, said it had been prepared as a result of certain recommendations made in the interim report on fruit and vegetables by the Committee presided over by Lord Linlithgow in 1923. The bill provided that salesmen who sold horticultural produce on commission must keep records of the names of all purchasers and of the prices paid by each, and they must render accounts to the consignor showing the actual price paid for the goods, and where there is any variation in price, the number, weight, or quantity sold at each price. The accounts must also contain details of charges for commission and for services rendered, and also amounts paid by the salesman on behalf of the consignor in connection with the sale. If any goods consigned for sale on commission were, in fact, bought by, or on behalf of, the salesman, that fact also must be stated in the account. Failure to comply with the requirements of the bill renderedthe salesman liable to a fine not exceeding £20 in the case of the first offence and £100 in the case of any subsequent offence. The provisions of the bill had been discussed by the Horticultural Advisory Council of the Ministry, and general agreement had been reached. The National Farmers' Union on behalf of the growers, and the National Federation of Fruit and Potato Trades' Associations on behalf of the wholesalers, had also come to an agreement upon its main points. The bill was read a second time.

Memorial to the late Mr. William Willett.—A bronze bust of the late Mr. William Willett, the originater of summer time, was unveiled on the 20th inst. in the Art Gallery at Colchester by Mrs. G. Magrane, his daughter. Mr. Willett spent a great part of his boyhood at Colchester.

London Railway Gardens.—The directors of Underground Railways, London, have granted first prizes to gardens at Ealing Broadway, Ealing Common and Northfields stations. Second prizes have been awarded to Minories Junction and Walham Green stations. A separate competition for vegetables grown by employees of the Underground Railways will be held in conjunction with the Employees Horticultural Society's exhibition to be held in September.

Botanical Magazine.—Part 3 of Volume CLI of Curtis's *Botanical Magazine* contains illustrations and descriptions of the following twelve plants:—Actinidia kolomikta, t. 9093, is an ornamental leaved climber, which was illustrated in *Gard. Chron.*, May 31, 1924, from a specimen growing at Walhampton, Lymington. This plant evidently requires a warm district; our experience with a young specimen in the London district is that growth is slow and the leaves have so far failed to develop their beautiful colouring. Spiranthes Pamii, t. 9094, is a terrestrial perennial Orchid, producing a tuft of basal leaves and flowering scapes, 15-30 cm. high. The bracts are green, suffused with red and the flowers are greenish with a whitish lip. Rhododendron saluenense, t. 9095, is a small, much-branched shrub, up to 60 cm. high. The flowers are usually developed in pairs and are coloured rose-purple with deep purple spots at the back of the throat. It is a hardy species. Cordyline indivisa, t. 9096, is an old garden species, stated to be by far the finest member of the genus. It has been described and illustrated in *Gard. Chron.* on several occasions. Jasminum Beesianum, t. 9097, was illustrated and described in *Gard. Chron.*, February 21, 1925. The flowers are deep rose or pink, and the fruits which succeed them, black. Polygonum campanulatum, t. 9098, is another old garden plant that has been described and illustrated in *Gard. Chron.* It is a useful subject for flowering in late autumn, the colour varying from pure white to all shades of rose to carmine. Pyracantha atalantoides and Pyracantha yunnanensis, t. 9099. The plate gives an illustration of the inflorescence of the former, and fruits of the latter species. P. atalantoides was described and illustrated in *Gard. Chron.*, December 30, 1926, under its synonym P. Gibbsii, whilst P. yunnanensis was described by Mr. Chittenden in *Gard. Chron.*, December 24, 1921. Primula siamensis, t. 9100, has also been illustrated in this journal (see *Gard. Chron.*, February 16, 1924, vol. LXXV, not LXXXV, as given in *Bot. Mag.*). The flowers are a delightful shade of mauve and whitish in the centre. Mammillaria conopsea, t. 9101, is glaucous-green, with snow-white wool in the axils, and it produces relatively large flowers of a clear purple colour; like Cacti in general, the plant is very spiny. Berberis lycioides, t, 9102, is a glabrous shrub growing up to 3m. high, producing leaves in fascicles of four to six, from which arises a raceme of yellow flowers that are succeeded by ovoid berries of a black-purple or black-blue colour, which are stated to make a delicious preserve. Mesembrianthemum stellatum, t. 9103, is an interesting member of the family of plants being dealt with in these columns by Mr. N. E. Brown. The flowers are rosy-purple; the species has been in cultivation at Kew for many years. Fritillaria Olivieri, t. 9104, is a species producing solitary, nodding flowers of the usual bell shape with the tips of the petals recurved. The outer petals are bright green on the outside with purple-brown markings upwards and yellowish-green inside.

Staining Imported Seed.—The United States agricultural authorities have adopted the principle of requiring that certain imported seeds be stained red, to distinguish them from seeds considered to be better adapted for American use. Thus a recent order has been issued for the staining of Italian Red Clover seed as not being adapted for general agricultural use in the United States; and from the 25th of September, this year, the staining will have to be carried out in the case of Alfalfa seed, both Russian and Chinese, imported from Africa and from Turkestan.

View from Richmond Hill.—Although the Middlesex Council has promised £3,750, towards the sum of £15,000 required for the purchase of the Orleans House Estate, Twickenham, for the purpose of preserving the beauty of the view from Richmond Hill, the Surrey County Council has so far declined to assist, and the London County Council has been advised by a special committee to decline a contribution. Richmond Town Council has made no promise of help in the acquisition of the property, while the Twickenham Council still has the matter under consideration.

Conservation of New Zealand Plants at Wellington.—The repeated suggestion that New Zealand should create a national collection of plants indigenous to the Dominion, appears likely to bear fruit in more than one direction. Mr. J. G. MacKenzie, the Director of the Public Parks and Gardens of Wellington, has given close attention to the subject, and quite recently requested Dr. L. Cockayne, hon. botanist to the New Zealand Institute of Horticulture, to make a thorough inspection of an area of land at Wadestown, known as Wilton's Bush, with a view to establishing there a collection of living native plants. In his admirable and favourable report to the Mayor, councillors and citizens of Wellington, Dr. Cockayne points out that the object of the scheme is to present a vivid picture of the plant life of New Zealand—so different from that of any other country—and the species of which it is composed, together with the use of such for the adornment of gardens. It appears from the report that the Council of Wellington has agreed to the reservation of Wilton's Bush, if suitable, for the purpose, and Dr. Cockayne congratulates the Council on its public spirit, which, if the scheme is carried into effect, will provide in the city of Wellington an open-air museum "the like of which has never been attempted before, not only in New Zealand but in any part of the world. That it would be an outstanding attraction to the citizens, both for its beauty and its educational function, does not need stressing." The main features of the scheme, as set out by Dr. Cockayne, are: (1) A well grown collection of, as far as possible, all the species of the New Zealand flora, from the North Cape to the south obscure islands, including also those of the outlying islands (Kermadecs, Chathams, Sub-antarctic islands); (2) representations on a fairly large scale of the leading plant associations of the land as they existed in primeval New Zealand; (3) the horticultural use that can be made of the plants most suitable for that purpose; and (4) the restoration of the present forest to what it originally was. It will be gathered, therefore, that the scheme is four-sided, and concerns the flora, *i.e.*, the plants, of New Zealand as a whole; the vegetation, or primeval plant-covering; the horticultural use of New Zealand plants; and the restoration of the forest at Wilton's Bush. Dr. Cockayne urges those interested in the scheme to assist by procuring native wild plants so that the reserve may at once become the people's garden. As a beginning, he suggests that an extensive alpine garden should be created near the stream at Wilton's Bush so that the plants may be introduced as they arrive. He also considers that one of the cliffs in the gully could be transformed into "a cliff of eastern Marlborough"—one of the loveliest and most striking sights in New Zealand—where many of the finest species of the New Zealand flora could find a happy home. Following this, a Kauri forest could be commenced. Dr. Cockayne is careful, however, to point out that the work suggested is not that of one day but of many years; each year will add to its extent, value and interest, and once begun it should never be allowed to decline. We hope, with Dr. Cockayne, that the scheme briefly outlined in his report will meet with the full approval of all concerned.

MR. GEORGE J. NICHOLLS, C.C., F.R.C.I.
Chairman of the Festival Dinner of the Royal Gardeners' Orphan Fund.
(see p. 77.)

The Iris Society's Bulletin.—The third *Bulletin* of the Iris Society, dated June, 1926, contains an excellent portrait of the late Mr. Wm. Rickatson Dykes, and several articles dealing with Mr. Dykes' association with Irises and other bulbous plants. In an article entitled "In Memoriam," Mr. P. Murrell gives a list of the varieties of Irises raised and introduced to commerce by Mr. Dykes. His first seedlings sent into commerce were Richard II and Goldcrest, both these appearing in 1914. The largest number was sent out in 1923, when he introduced twenty new varieties to commerce. Mr. Murrell places his best six varieties as follow: Aphrodite, pink; Peerless, mahogany-red; Wedgewood, deep blue; Amber, yellow; Harmony, purple: and Goldcrest, Dauphin's blue. Mr. George Dillistone, the Hon. Editor, contributes an illustrated article entitled "Planting an Iris Garden,"and other articles include, "The Intermediate Iris," by Mr. W. J. Caparne, and "Scent in Bearded Irises," by Mr. A. J. Bliss, who states that most Irises notable for scent are found amongst the Pallidas (including Plicatas) and Trojana-Pallidas. The frontispiece is an outline drawing of an Iris to explain the terminology used to denote the various parts of the Iris flower.

The Retailing of Flowers.—The Florists' Telegraph Delivery Association is offering $2,000 in cash prizes for the three best and most practical new ideas in connection with the retailing of flowers. The first prize will be $1,000, second prize, $600, and the third prize, $400. These new ideas may be with reference to make-up and design, administration, advertising, delivery, salesmanship, equipment, or any of the numerous other activities and departments of the retail florist business. All employees or firms engaged in any branch of floriculture or accessory lines are eligible to enter the competition, and may submit any number of entries. Entry forms may be obtained from Mr. Otto R. Sielaff, 815, Bate Street, Detroit, Michigan, and must be returned not later than September 14.

Attendance at the Royal Agricultural Society's Show.—The attendance at the show of the Royal Agricultural Society at Reading was only 73,000 for the five days, and is the smallest since the last of the Park Royal Shows in 1905. Whilst the attendance was so meagre, the show in other respects was a very great success, and the Horticultural Section was the best of the series.

Gloucester Root, Fruit and Grain Society.—The exhibition of this successful and enterprising Society will be held at the Shire Hall, Gloucester, on Tuesday, November 9, and although most of the classes are for farm roots and grain, there is a section for dairy produce, one for fruits and one for Chrysanthemums. Fairly liberal prizes are offered for a group of Chrysanthemums, for twelve Japanese blooms, and six vases of single varieties. The secretary is Mr. S. S. Starr, 11, London Road, Gloucester.

Favourite Wild Flowers.—The *Observer* has just concluded a competition amongst its readers, who were invited to place in order of merit the six most popular wild flowers. As may be expected, this proved to be a very popular competition, and a large number of lists were returned. The most popular flowers, with the votes of each, were: Primrose, 982; Bluebell, 839; Wild Rose, 789; Violet, 686; Honeysuckle, 574; and Cowslip, 439. Next in order of voting, came Buttercup, 355; Daisy, 235; Marguerite, 231; Daffodil, 195; Poppy, 168; Foxglove, 137; Heather, 134; Forget-me-not 116; Snowdrop, 48; Kingcup, 47; Harebell, 46; Anemone, 39; Hawthorn, 39; Meadowsweet, 33; Cornflower, 28; Lily-of-the-Valley, 18; Orchid, 17; Scabious, 16; and Gorse, 15; with Blackthorn, Mimulus, Crocus and Dandelion at the bottom of the list with one vote each. While the lists of sixty-four competitors contained the names of all the six most popular flowers, variously arranged, only one correctly anticipated the order of the poll.

French Chrysanthemum Congress at Blois.—The twenty-sixth annual Congress of the French Chrysanthemum Society will take place at Blois, from November 4 to November 7, 1926, under the auspices of the Société d'Horticulture du Loire-et-Cher. The programme will be a full one, beginning at nine o'clock on the first day with the judging at the exhibition, and including a long day spent in visiting the old Châteaux for which the Loire district is so famous. Those who are able to stay until Monday, the 8th, will see an interesting demonstration of mechanical horticultural apparatus by the Etablissements du Creusot.

A Fleet Street Greenhouse.—We learn that Messrs. Benn Brothers, the proprietors of our contemporary, *Gardening Illustrated*, have erected a greenhouse on the roof of their large new building in Fleet Street, wherein it is intended to grow flowers for the decoration of the offices. It will be interesting to see how far the experiment succeeds, in defiance of the smoke-laden atmosphere and feeble sunshine which are so detrimental to horticultural produce in the centre of London.

Scholarship Entrance Examination Result at Swanley.—At the Scholarship entrance examination at the Horticultural College, Swanley, the following candidates were successful:—Miss Kathleen E. Hull (Scholarship of £40), Miss Penelope Waterfield (Exhibition, £30), Miss A. B. Beakbane (Exhibition, £30), Miss Ada Neave, Miss Brenda Watts, and Miss Evelyn F. Hendry.

Retirement of Parks Superintendent at Lyons.—Professor Gérard, the Superintendent of the Public Parks at Lyons, in France, has just retired, having occupied his position since 1887. During his long years of service he has greatly enriched the horticultural beauties of the city, and the inhabitants are particularly proud of the lovely Tête d'Or Park, perfectly maintained and beautifully ornamented with flowers. His successor is M. Faucheron, previously Vice-Director of the Botanic Garden; besides being a skilled horticulturist, he is a distinguished botanist, and has written several books, including a flora of the Alps.

Severe Hail Storm in North Devon.—We learn from Mr. G. Sleep, Hartland Abbey, North Devon, that a severe thunderstorm, accompanied by hail, was experienced in North Devon on July 18. The hail stones were as large as medium-sized Cherries and could be seen in drifts, a foot deep in some places, so late as eight hours after the storm. All vegetable crops were damaged beyond recovery and a very large percentage of what was a record Pear crop has been badly bruised by the hail. Several trees were uprooted by the violence of the storm and in Clovelly Court a large anoumt of glass was broken.

Bagatelle Trials Adjourned.—The earlier cold, wet weather having retarded the development and flowering of the Roses sent for trial to Bagatelle, Bois de Boulogne, Paris, the judges, who assembled at Bagatelle on June 21, for the purpose of reporting on the new varieties sent the previous year, decided to postpone their examination. They found it quite impossible to judge fairly the qualities of the different varieties presented, and decided to wait another year before giving a definite report.

Horticultural Congress at Limoges.—The Congress of the French National Federation of Horticultural Societies will take place at Limoges, on September 4 and 5, 1926. Among the subjects discussed will be co-operation and agricultural credits; the preservation of fruits for family use; and the rôle of the horticultural society in the development of gardening technique. To coincide with the dates of the Congress, the Haute-Vienne Horticultural Society is to arrange a horticultural exhibition.

Preservation of Trade Catalogues.—Mr. Edward A. Bunyard, Chairman of the R.H.S. Library Committee, writes: "In your current issue (July 17) you suggest that it might be well if nurserymen's catalogues were collected by the Lindley Library of the R.H.S. I should like to point out that the Library Committee have for many years purchased all available copies of old catalogues, and only recently issued an appeal for these and for modern catalogues. I venture to take this opportunity to repeat that either will be most gratefully received by the Librarian at Vincent Square."

Mammoth Cave, Kentucky.—It is good news that the Mammoth Cave, in Kentucky, and the district surrounding it, are to be preserved in a national park. A river known as Echo River runs for many miles through this remarkable cave, which is full of a strange subterranean beauty. The walls of the cave, in parts bare limestone, are roofed in places with beautiful forms of gypsum. The earth of the cave is rich in saltpetre, and during the war of 1812, Mammoth Cave formed an important source of supply of this valuable material, the import of which was greatly hampered.

Scottish Fruit Crops.—Owing to the low temperature prevailing at the time of flowering and the lack of sunshine generally, the prospects of the fruit crops in Scotland, according to the Board of Agriculture's report, are rather disappointing. In south-east Perth good yields of Strawberries and Gooseberries are expected, while in Fife, Forfar, central Argyll and Kincardine shires small fruits generally promise to be average crops, but elsewhere the prospects are unfavourable. In south-east Lanark the yield of Strawberries and Raspberries is estimated at about five per cent below the normal, and that of Currants and Gooseberries about ten per cent. deficit. Apples generally promise fairly well, except in south-east Lanark, but Plums and Damsons will probably be small crops. In a brief reference to Potatos, the report states that rapid progress was made during the past month, and the crop is now looking unusually well in most places.

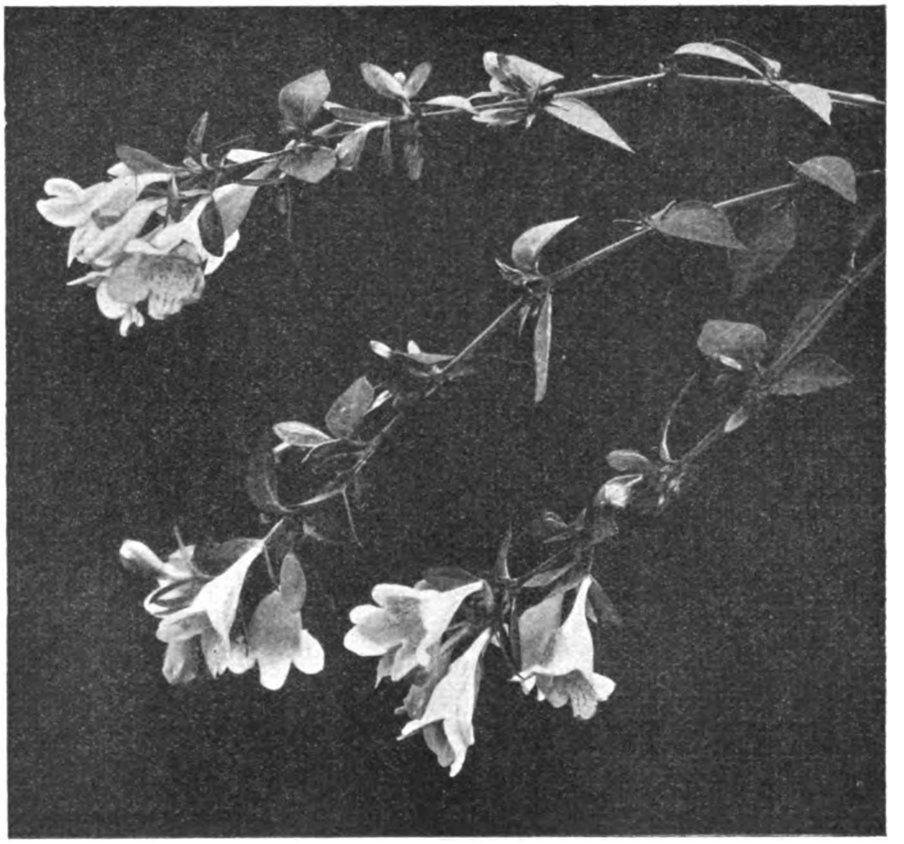


FIG. 36.—ABELIA SCHUMANNII.

R.H.S. Award of Merit, July 13. Flowers pale lilac. Shown by Mr. J. Preston.
(see p. 57.)

New Roumanian Horticultural College.—The State Horticultural College at Bucharest, Roumania, which will shortly be opened, is to have as its Director, M. J. Hasegenu, a former student at Versailles, who has been up to the present a professor in the State Agricultural College in Roumania. He is also vice-president of the Roumanian Horticultural Society.

Appointments for the Ensuing Week.—Tuesday, July 27: Royal Horticultural Society's Committees meet; Newcastle Horticultural Mutual Improvement Society's meeting and lecture; Royal Tunbridge Wells Horticultural Society's show (two days). Wednesday, July 28: Dorset Horticultural Society's show; Crowthorne Horticultural Society's show. Thursday, July 29: Royal Lancashire Agricultural Society's show (four days); Paisley Florists' Society's meeting. Saturday, July 31: Dumbartonshire Sweet Pea Show at Helensburgh.

"Gardeners' Chronicle" Seventy-five Years Ago.—*Watering a Flower Garden.*—I quite agree with your correspondent that watering during continued sultry weather, as often so performed, does more harm than good. This is generally the case when an insufficient quantity is given to reach below the roots; dribbling upon the surface is worse than labour lost. The surface, under such circumstances, becomes so caked, that no air can penetrate the soil. But if the latter is well deepened, moisture will rise to enable the roots to supply the leaves with what is lost by them in perspiration; watering properly assists the roots in many ways, but the dribbling system, while it does no good to the lower and principal roots, deprives them also of their previous supply, as watering the surface destroys for a time the power of capillary attraction. Surface watering encourages surface fibres, which are easily scorched by a burning sun: fresh waterings are given, fresh fibres encouraged, and thus the contest goes on between the vitality of the plants on the one hand, and the mistaken kindness of the gardener on the other. Some soils require less watering than others—for instance, where the staple is stiff and heavy it is liable to crack and bind together so hard that it will not permit the first rain to penetrate it: under such circumstances deep stirring will be found most useful, as stiff soil retains its moisture much longer than that of a porous character. *Cymro., Gard. Chron., July*, 26, 1851.

The Week's Work.

THE ORCHID HOUSES.

By J. COLLIER, Gardener to SIR JEREMIAH COLMAN, Bart.,
Gatton Park, Reigate, Surrey.

Vanda.—The flowering period of the terete-leafed Vanda teres is over, and its growing season has commenced. As the plants become active at the roots any repotting or re-surfacing that is necessary should be given attention. Specimens that have grown to a great length may be reduced by cutting part of the lower portion of the stems to below some of the aerial roots, and the top parts repotted singly, or three or more stems may be placed together in a pot of a suitable size, or in a narrow box or trough; whichever kind of receptacle is employed, it should be provided with plenty of clean crocks for drainage. Each stem should be secured to a neat stake, preferably of Teak wood. Plants that do not need to be cut down should have all the old materials washed from between the roots and fresh compost substituted. Whilst making its growth, this Vanda needs a high temperature and an abundance of moisture. The stock may be increased by leaving the lower part of the stems of the plants, from which the tops have been removed, in their receptacles, and if they are afforded moist conditions, new growth and roots will soon develop, when they may be repotted and grown in the usual way. Other terete-leaved Vandas, such as V. Watsonii, V. Kimballiana, together with the hybrid Aeridovanda Mundyi are rooting and growing freely. These plants should be grown in a light and very moist position in a house having an intermediate temperature.

Vanda coerulea.—After its season of rest since passing out of flower this Orchid has again become active at the roots, and the work of repotting should be done. Plants that have retained their bottom foliage should merely have the old compost picked from between the roots and fresh materials added. Others that have become bare of leaves at the base should have portions of the stem cut away below some of the aerial roots, and be placed as low down in their receptacles as possible, filling the latter with clean crocks to three-quarters their depth, and finishing with compost up to the rim. Grow the plants in an intermediate temperature. Syringe the bare spaces between the pots and the undersides of the leaves on frequent occasions during bright days.

THE KITCHEN GARDEN.

By F. STREETER, Gardener to LORD LECONFIELD, Petworth
Park, Petworth, Sussex.

Spring Cabbage.—The largest and most important sowing of Spring Cabbage should now be made in well-prepared ground on a south border, if possible. Give the soil a dressing of lime and dig it deeply. Draw a sufficient number of drills, twelve inches to fifteen inches apart and if the soil is very dry, water it copiously before sowing. Scatter the seeds thinly and evenly, neatly cover them with soil and complete the bed. Place an old fish-net over the seed-bed to keep birds away. After soaking the drills I never give seedling Cabbages more water until they are planted out. The best varieties are undoubtedly Harbinger, April, Flower of Spring and a good stock of Ellam's Early.

Spinach.—A liberal sowing of Spinach should now be made in rich, open ground to withstand the winter. See that the ground is fairly firm and in good heart. Allow a distance of twelve inches between the rows and thin the young plants early to nine inches apart in the row. Keep the soil well-stirred with the hoe. The previous batches should be used and cleared from the ground immediately a successional planting is ready for cutting; by this means the ground will be kept well-cropped.

Mushrooms.—Preparations should be made for the autumn and winter supplies of Mushrooms. Well-made beds will continue in bearing for two or three months or even longer, so no amount of trouble taken should be considered lost labour. Experience shows, however, that it is profitable to discard an exhausted bed and make a fresh one. We are greatly favoured here at Petworth with houses capable of holding eighteen fair-sized beds, and a plentiful supply of first-class manure. The houses are lighted by electric light and heated by an independent boiler. Collect the horse manure daily and keep it in a shed facing north, turning it every other day. Should the manure become dry, moisten it with soft water. Damp the floors three times a week with liquid manure where the beds are now bearing, and if the beds are out-of-doors see that they do not become dry.

Watering.—The weather at the time of writing is very dry, and considerable watering is necessary at night. Except in the case of Turnips, I do not believe in watering crops during the day when the sun is very bright; it is far better to wait until the cool of the evening.

FRUITS UNDER GLASS.

By T. PATEMAN, Gardener to SIR CHARLES NALL-CAIN,
Brocket Hall, Hertfordshire.

Early Peach House.—Although the fruits have been gathered in the early Peach and Nectarine house, the trees should in no way be neglected during the summer. Keep the borders well supplied with moisture, for much depends on the cultivation of the trees during the coming months for the production of well-ripened wood. If the borders are allowed to dry out excessively the wood will fail to mature properly, with resultant injury to next season's crop. Bud-dropping, when the trees are again started into growth, may be traced to this error of cultivation alone. With all the ventilators thrown open to admit as much air as possible to the tree, it is surprising how quickly the borders dry out, and it is during hot, dry weather that the borders should be well supplied with moisture. If the trees produced a heavy crop and are not too vigorous, their roots should be given weak liquid manure on frequent occasions; soot water is also to be recommended for trees that appear to produce sickly growths. The trees should be syringed vigorously when the weather is exceedingly hot, to keep in check any insect pests that are likely to attack the foliage.

Midseason Peaches.—So soon as the fruits have been gathered from midseason Peach and Nectarine trees, it is advisable to take out the old fruiting wood to enable the sun and air to circulate freely among the trees. This will greatly assist in producing well-ripened growths which are to produce next season's crop. The house should be ventilated freely where possible. In places where only one or two houses are available for growing Peaches, trees are planted for rotation cropping, and this free ventilation cannot always be done, but even in this case I would advise a little top ventilation at night. As a rule the border is kept slightly on the dry side when the tree is ripening its fruit, therefore, immediately the fruits are gathered, the border should be given a thorough soaking with water. If the trees are young and vigorous abstain from giving them a nitrogenous manure, but rather use a manure strong in phosphates. Keep the trees clean by the frequent use of the syringe, and if insect pests are present use an insecticide.

Late Peaches and Nectarines.—Where it is desired to have the fruits in this house as late as possible, ventilate freely on every possible occasion, and during hot weather allow the top ventilator to remain open at night to retard the ripening of the fruits. Where the trees are heavily cropped they should be given light stimulants frequently; it is much better to feed the trees a little and often than to apply an excess of food at one time, especially if the tree is weak, for it often happens in such cases that root action is slow and a heavy dose of stimulants would do much more harm than good.

THE FLOWER GARDEN.

By F. C. PUDDLE, Gardener to LORD ABERCONWAY,
Bodnant, Taly-Cafn, North Wales.

Sweet Peas.—These plants are flowering profusely, and all faded flowers and seed-pods should be removed. It will also be found a good plan to cut off occasionally all the expanded flowers, thus allowing the plants a short period of recuperation, which will assist them to carry on their display until late autumn. For flower garden decoration it is better not to attempt to restrict the plants to one stem, but to allow all the lateral growths to develop naturally, so that the plants may be clothed with flowers from top to bottom.

Primulas.—Many species of Primula are ripening their seeds and these should be sown immediately they are gathered, for although Primula seeds are always capricious in their germination, newly-harvested seeds may be relied on to germinate fairly readily and evenly, whereas the keeping of the seeds for only a few weeks may make a difference of months in the time of their germination. It is necessary to vary the soils in which the seeds are sown to suit the various sections of Primulas. Those of the Candelabra group and other moisture-loving species, such as P. sikkimensis, P. secundiflora, P. involucrata, P. Wardii and P. Littoniana, may be sown in a compost consisting of four parts leaf-mould or peat, two parts loam, and one part silver sand. Primula chionantha, and other species of the Nivalis section; Primula muscarioides and its allied species, also those of the P. capitata and P. Maximowiczii groups need a little sharper drainage, and this may be provided by a further addition of sand to the above mixture. The Geranioides, and the Omphalogramma sections, together with P. Reedii, P. Baileyana and other dwarf species are, perhaps, better suited with a mixture consisting of three parts leaf-mould, two parts good fibrous loam and sufficient sharp sand to ensure really good drainage, the quantity of the latter varying according to the texture of the loam. Thin sowing is especially necessary at this season, for although some of the seedlings may be ready for pricking out in a few weeks, others may germinate more slowly and not be large enough to handle before winter sets in. In such cases the young plants are better left in the seed-pans until the early spring. After sowing the seeds the receptacles should be placed in a cool, shaded house or frame until germination takes place, after which the strong-growing species may, if space is limited, be placed in a sheltered and shaded position out-of-doors. The weaker-growing species will, however, be much safer under glass for the first winter.

Meconopsis.—Seeds of the various species of Meconopsis are beginning to mature. The seed-capsules open at the top and the plant commences its natural process of seed dispersal while the capsules themselves are still apparently green, therefore, it is necessary to keep a close watch and gather the seed-pods immediately this is observed, or many valuable seeds will be lost. Meconopsis may be raised from seeds sown under the same conditions as those of Primulas. It is, however, a wise proceeding to reserve a small quantity of the seeds for spring sowing, for anything in the nature of a cold, damp, stagnant atmosphere during the winter may cause heavy losses among the young plants.

PLANTS UNDER GLASS.

By John Coutts, Assistant Curator, Royal Botanic Gardens, Kew.

Nierembergia frutescens.—This beautiful plant, although more or less hardy in the south, is a very charming subject for conservatory decoration. It is easily raised from seeds which, if sown at this time, will furnish useful plants for next year. The seeds germinate readily in a cool greenhouse. As the plant is slender in habit, the best results are obtained by growing three or four plants in the same pot; they should be pinched frequently to obtain bushy, well-furnished specimens, but during the winter they may be allowed to grow unchecked. Early in the New Year they should be cut back and the subsequent growth allowed to flower. Variation generally occurs in a batch of seedlings, darker coloured and pure white forms usually appearing. If it is desired to retain any of them, they may be propagated readily by means of cuttings.

Aotus gracillima.—This greenhouse shrub may be easily increased at this time by means of cuttings, selecting for this purpose short, twiggy shoots. They should be treated like the usual run of hard-wooded plants, inserting the cuttings in a firm compost of sandy loam and peat. Water the soil freely and stand the cutting-pots under a bell-glass in a cool greenhouse. When rooted, the young plants should be placed singly in small pots, afterwards potting them on as they require it. They need to be stopped on several occasions to promote a bushy habit. The long, slender flowering sprays of this plant are, however, displayed to best advantage when grown in standard form; for this purpose the young plants should be pinched once, then two of the strongest shoots should be selected and trained up to form the stem, afterwards stopping them at the required height, three to four feet being suitable. This plant flowers during the spring: after blooming, the shoots should be cut hard back, and the subsequent growth allowed to grow without a check.

HARDY FRUIT GARDEN.

By W. Auton, Gardener to Viscount Elveden, Pyrford Court, Woking, Surrey.

Woolly Aphis.—This troublesome pest has made its appearance on certain Apple trees, notably King of the Pippins and Ribston Pippin, and immediate steps should be taken to combat it. Washing, to be effectual in destroying this insect during the summer, when it spreads to the young wood, should be commenced immediately the first trace of it is seen. Paraffin emulsion is a good insecticide for this purpose.

Apricots.—As the fruits approach maturity, it is essential to give them the benefit of full exposure to light and any that are covered with foliage should be brought forward or have the leaves which cover them removed. Make sure that the trees are sufficiently supplied with moisture at the roots, for if they are allowed to suffer in this respect at this stage the fruits will not attain that perfect finish which is so desirable. Alternate waterings with dilute liquid manure is of great help in assisting the tree to finish the crop. If the trees are not mulched, stir the soil with the hoe so soon as it is practicable after each watering to break the surface and check evaporation.

Vines.—Vines out-of-doors should be stopped closely and the shoots trained to the supports. All the energies of the plant should be diverted to the swelling and finishing of the bunches, which cannot be expected to ripen in our short seasons unless every care is taken to ensure them all the light and warmth possible. The overcrowding of foliage is a frequent cause of mildew, but where the leaves can develop under full exposure to the sun's influence they are much better able to resist attacks. Shoots bearing bunches will have been stopped at the second leaf beyond the bunch, and all sub-lateral growths should be stopped at the first leaf. See that the ties near the bunches are secure and sufficiently strong to keep the latter in position, and thin the berries as early as is practicable.

Autumn-fruiting Raspberries.—Tie the shoots as they advance in growth and cut out any of the canes that are weak and not likely to be fruitful. On light soils in particular, the autumn-fruiting Raspberry should be well-supplied with suitable nourishment, and if liquid manure is not available a quick-acting fertiliser should be used. In either case, however, care should be taken to see that the border is thoroughly moist before applying the stimulant.

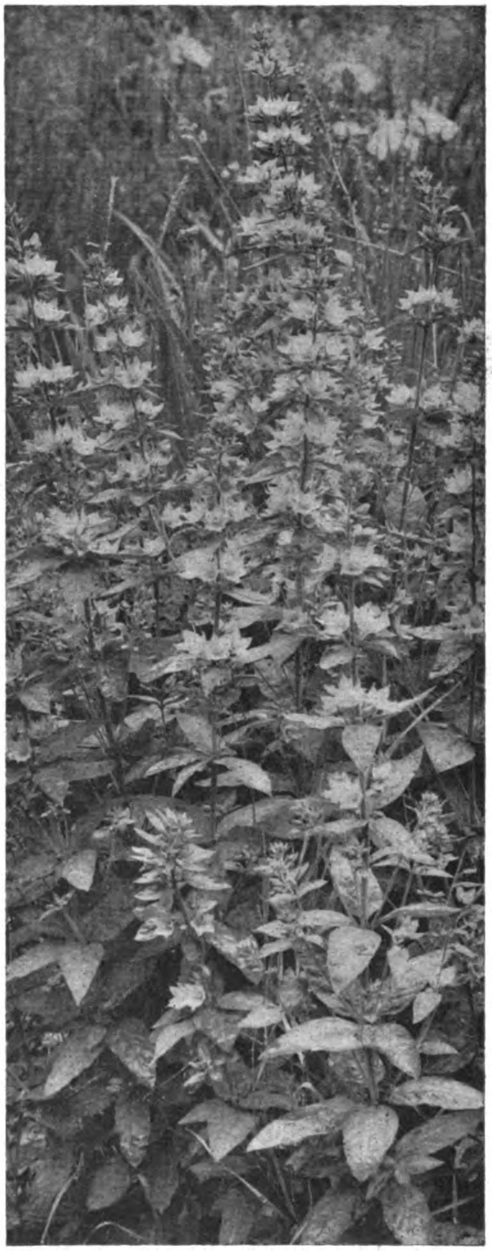


FIG. 37.—LYSIMACHIA PUNCTATA AT WISLEY.

(see p. 72.)

Strawberries.—Early planting is an important detail in the cultivation of the Strawberry, and where new beds are to be planted early next month, the sites should be prepared forthwith. Choose an open position free from the influence of trees or bushes and thoroughly prepare the ground by double digging or trenching it. On light, sandy soils liberal additions of farmyard or vegetable manures should be made to help to make them more retentive of moisture. Present-day Strawberry culture presents considerable difficulties, and on light soils, at any rate, even the more vigorous varieties fail to give good results after the first year, hence it becomes more and more necessary to apply intensive methods to young plants to obtain as heavy a crop as possible the first year and then discard them.

FOR NORTHERN GARDENERS.

By A. T. Harrison, Gardener to the Marquis of Ailsa, Culzean Castle, Maybole, Ayrshire.

Regal Pelargoniums.—Plants of these Pelargoniums which have been in flower for nearly two months are approaching their season of rest and should be stood outside for a time to allow the wood to harden gradually before drying them off. Very old plants may be dispensed with at this time, but before doing so it is a good plan to secure cuttings for a young batch; these, if taken when the growths have partially hardened, are not so liable to damp off as more sappy growths would. Young plants raised from these early cuttings, if grown on well and stopped once or twice, make splendid specimens for next season's display. With the many improved forms of Regal Pelargoniums now in commerce has come a revival of interest in these beautiful, summer-flowering plants, and where greenhouses or conservatories have to be kept gay with flowers during June and July they are most valuable.

Crassula coccinea.—This old-fashioned plant is once more being widely grown in gardens, probably under its other name of Kalanchoe coccinea. When well-grown and flowered it is a useful addition during the summer, and its sweetly-scented, scarlet flowers, although somewhat stiff, are of enhanced value when grown in quantity. So soon as the plants have ceased to flower and cuttings become available, the latter should be inserted in sandy soil in small pots either singly in thumbs, or what is a better plan, resulting in a better pot-plant later, three in a three-inch pot, these to be potted on later without separation. There are several colours to select from amongst the Crassulas, but the type coccinea is still the best.

Cyclamen.—Seeds of Cyclamen should now be sown in order to obtain young flowering plants for the season 1927-28. These should be sown singly about one inch apart in pans or boxes and covered fairly deeply, as these seeds have a tendency to work up to the surface. The seed-pans should be placed in a moderately warm house and kept shaded until germination takes place, when they should be placed on a shelf near the light, and the seedlings grown on steadily until they are ready for pricking out separately. Plants from the sowing made twelve months ago, are now occupying five-inch pots, in a partially-shaded, cool house, where they will remain probably until fire-heat is again required in autumn. Older plants which have been resting for two or three months should now be examined, the blind and useless plants thrown away, and the remainder repotted in a mixture of loam, leaf-mould, lime rubble and sand, taking care to supply water in very limited quantities, until such time as the young roots have permeated the new soil, and have once more reached the inside of the pots. These two- and three-year-old plants are capable of producing enormous crops of flowers during next February and March, when they may be discarded.

Melons.—The fruits on plants raised from an April sowing are now approaching the ripening stage, and care is necessary in applying water and stimulants, too much of either being liable to cause the fruits to split and crack, while, on the contrary, too little moisture at the roots soon causes the plants to wilt in a distressing manner, stopping the flow of sap into the fruits and spoiling the flavour. Where hot-beds are used under the soil for Melon-growing, the added bulk of rooting material now available is of great assistance, as the larger quantity does not dry out quickly, and the watering can is not required frequently. So soon as the fruits have been removed the plants, if healthy, may be trimmed back, and the young shoots trained up from the base to produce a few more fruits later in the season, although the healthy Melon plant capable of producing a second crop is the exception nowadays rather than the rule.

TREES AND SHRUBS.

CLIANTHUS PUNICEUS MAGNIFICUS.

This strong-growing New Zealand climber produces its striking scarlet flowers in dense clusters in summer, when they almost cover the beautiful pinnate leaves. A dry, warm soil and a sheltered position are essential for its welfare, but given these conditions it makes rapid growth, and even when not in flower is a beautiful subject

The growth is very brittle, hence considerable care should be exercised in training, as if the branches are not secured to the wall or wires as they grow they are easily broken.

The plant is only suitable for gardens in the southern counties and would probably not withstand very severe frost, but it is so rapid growing and of such easy propagation that it is worth while risking it in any moderately sheltered situation. *A. P. C.*

STYRAX WILSONII.

This shrub was considerably injured by the exceptionally severe frost of last winter, most of the more slender twigs being killed back to about half their length. Under average conditions, however, with anything up to 15° of frost, it has hitherto proved quite reliable, growing without protection in the open border.

S. Wilsonii is a very delightful shrub of elegant habit, the branches being furnished with ovate leaves about the size of those of the Privet, which, with the young wood, are at first silvered with a fine down. The nodding, bell-shaped flowers in a pure, glistening white, appear in June and continue for at least a month.

So far, this species has been a most regular and free-bloomer every year. I have my specimen in ordinary, well-drained border soil, and it commenced flowering when it came in a six-inch pot. Now it is about five feet tall, and it is said to attain double that stature. It was introduced by Mr. Wilson from western China about twenty years ago.

RHODODENDRON VISCOSUM.

Late-flowering Rhododendrons of the class usually listed as Azaleas are comparatively few, but the subject of this note is one of the most attractive of them. It is one of the so-called Swamp Honeysuckles of eastern North America and of the easiest culture in any average lime-free loam which is not too dry.

Though it will grow to seven feet, R. viscosum is more often seen at about half that stature, making a shapely, bushy shrub. It is a deciduous species producing its blossoms in June or later at the ends of the previous year's growths. These flowers are tubular, white or rosy-white in colour, very fragrant and quite sticky to the touch. R. viscosum is a singularly pleasing shrub, and the date of its blooming will commend it to many. There are many varieties to be met with in the wild state, and some of them (notably Azalea glauca) have found their way into our gardens.

HEDYSARUM MULTIJUGUM.

This Mongolian shrub is one which, owing to its flowering in the later summer and for a long period, should be more often seen in gardens. It is deciduous, quite hardy, and of a semi-trailing habit, rising to four or more feet, but often covering a space wider than its height. If the growth is somewhat angular and ungainly, the pretty pinnate foliage, silvered by a fine down, and the elegant flower racemes, nearly a foot long and bearing many crimson-purple Pea flowers, are more than sufficient compensation.

I find this shrub a first-rate subject for dry, hot places where the soil is thin and poor, and if the branches can hang over a rock or low retaining wall the effect is the more charming. Some growers cut back in spring to more than half way the growths of the previous year, but it is questionable whether the practice is a good one. On the other hand, pegging down the main branches leads to a free basal growth of flowering wood and tends to prevent that ungainliness alluded to.

LITHOSPERMUM FROEBELII.

This is an interesting hybrid, said to have been the result of a cross between L. graminifolium and L. petraeum (Moltkia). Here it has not attained more than a height of about six inches, the woody, upright stems being tufted with rosettes of narrow, dark green leaves. During midsummer these put forth short sprays of bloom which, in the brightness of their blue, rather suggest those of L. graminifolium than the other parent. Any free soil, with lime and full exposure suits this little shrub, but it should always, if possible, be given a close-up position in the rock garden, and if placed about level with the eye, so much the better. *J., N. Wales.*

DEUTZIA CRENATA MAGNIFICA.

This beautiful variety is of recent introduction and a plant of the easiest culture. The flowers are produced on stout, wiry stems which are wreathed with double snowy-white flowers of a delicious perfume.

For sunny, or half-shady borders, this Deutzia is one of the most effective of hardy shrubs, and if planted with a background of Prunus Pissardii or other dark-foliaged plant, is extremely ornamental. *W. L.*

SHRUBS FROM CUTTINGS.

The majority of shrubs, both hardy and half-hardy, may be propagated by means of cuttings, and when subjects of doubtful hardiness are grown, it is a sound practice to maintain a stock of young plants to replace any which may be killed during a hard winter.

The success of shrub propagation depends largely in the taking of the cuttings when the young shoots of each particular subject are in the most suitable state for propagating purposes, and it will be found a good plan to keep notes from year to year of those species which have not rooted satisfactorily, and to insert the cuttings at an earlier or later date the following season, as may be thought most advisable.

The most suitable time for taking cuttings of the majority of shrubs is during August and the early part of September, but there are some which root more readily if the cuttings are inserted at the present time. These include Viburnum fragrans, V. Carlesii, and V. macrocephalum, Osmanthus Delavayi, various species of Abelia, Exochorda, the less hardy Vacciniums, Camellia japonica, C. cuspidata and the beautiful C. reticulata.

The triflorum series of Rhododendrons may also be propagated from cuttings taken in July, and this will probably be found the best way to increase the stock of the best blue forms of R. Augustinii, for although these may be raised easily from seeds, the seedlings do not, as a rule, prove so good in colour as the parents. The cuttings taken at this season will root more readily if they are placed in a close, shaded propagating frame, with a mild bottom heat. A bed composed of three parts silver sand and one part clean leaf-mould will be found an excellent medium in which to root them. These comparatively soft cuttings should, whenever possible, be taken with a heel. *F. C. Puddle.*

COROKEA MACROCARPA.

The most beautiful of the New Zealand Corokeas which I have yet seen, this species has enhanced its great merits as an ornamental shrub by surviving last winter without the slightest injury. Growing quite in the open and without protection of any kind, the soil being light, a specimen of about three feet in height was subjected to 20° of frost for considerable periods and most trying interludes of frozen sleet. Here, at any rate, we can rely on it to withstand almost any kind of winter weather we are likely to get.

This seems the more remarkable when one regards C. macrocarpa in comparison with C. Cotoneaster or C. buddleioides, for the first-mentioned is a softer-wooded shrub, its leaves are two inches to three inches long and nearly one inch wide, and their bright, glossy green suggests a greater susceptibility to frost than those of its tougher, bronzy-leaved allies. These finely-tapered leaves have white undersides, and the whole of the younger wood is also white, this making a pleasing contrast with the vivid green of the upper leaf surfaces, especially in winter. Unlike the other species named, the habit is stiff and erect, but by no means ungraceful. The bright, orange-yellow, star-like flowers appear in May, but no fruit has yet been borne here. *A. T. J.*

A NATIONAL ROSE GARDEN.

In a recent article by *C* on the famous Rose garden of France, Roseraie de l'Hay (*Gard. Chron.*, July 3, p. 8), I was glad to see a plea for an English National Rose Garden, expressed as follows: "Could not some British amateur Rosarian, with ample means and a suitable position, found a Rose garden on similar lines in England? Our national flower demands something of the kind, and the man or woman who will establish it will win fame and do a great service to horticulture."

Six years ago I also ventured such a plea (*Rose Annual*, 1920, p. 132), but as yet, I fear, there is little sign of such an idea taking shape. However, it is well to keep the matter before the horticultural public in the hope that it may eventually catch the eye of some Rose-loving millionaire! The securing of a site should not be difficult. "Stately homes of England" all over the country are coming under the hammer or are being left derelict. Surely one of these would make an admirable setting for a national Rose garden! It may show cautious wisdom on the part of the very flourishing National Rose Society not to embark on new enterprises with the possibility of getting into financial difficulties, but it could, at any rate, lend its sympathy towards this idea and, should it be likely to materialise, to act in an advisory capacity, and, perhaps, eventually take over such a garden if adequately endowed. *J. Parkin.*

ROSE GARDEN.

ROSES OF SUPERIOR MERIT.

Dame Edith Helen.—A new pink Rose is sure to be greeted with the remark, "We have plenty of pink Roses." This is certainly true, and unless a new pink Rose possesses quite exceptional quality and distinctive character there is no room for it. Yet the new pink Dame Edith Helen not only possesses the superior merit which entitles it to favourable consideration, but there is in its character a combination of sterling qualities which justifies a hearty welcome from all sections of Rose lovers.

The form of the flower is superb, and its colour is rich, solid and lasting; the back, front, base, and margin of the petals are equally rich and decided in colour, and furthermore, an old bloom retains the colour as well as the young blooms. In substance the flower is wonderful, withstanding heat that shatters the majority of modern, thinly-petalled flowers, and in wet weather—I have seen it drenched as well as sunbathed—it appears to be waterproof, and dries up with less staining than most.

My advice is do not too casually pass by Dame Edith Helen just because we have plenty of pink Roses; this is one of the real treasures of recent years.

Rev. F. Page Roberts.—This Rose has been a few years coming into its own. If I am correct in the belief that the reverend gentleman himself selected the Rose to bear his name, therein lies token of his rare judgment of a Rose, for it has quietly made its way into the security of the inner circle of Roses beloved by discriminating experts, and by a widening circle of those who are simply fond of Roses.

This variety had not made a particularly strong appeal to me until two years ago I had occasion to seek half-a-dozen plants, and discovered it was sold out quite early in the season by about a dozen firms I tried before finally getting the small plants left of a batch. Thus I became aware of the keen demand for it, which shows the popularity of a variety. Shortly after, a grower on a big scale told me that he also had just reckoned it among the ordinary items of his stock, but had found from orders received that it must be given a place among the few varieties which are grown in blocks instead of just a row or two.

Both last year and this year this variety has been kept under close observation, and it is undoubtedly a Rose of superior merit ; one that may be planted with confidence by all.

Scarlet Glory.—This Rose has other merits than that of dazzling brilliance, for, unlike some of its equals in point of colour, it has good form and lasting qualities. In regard to the latter, it not only holds its petals and retains its shape for a long time, but it also holds its colour, which does not fade to a dull, spiritless red. That is a very vital point, for however freely a Rose may bloom, and bright as may be its freshly-opened flowers, the whole effect is marred if, distributed among these bright blooms are numerous old flowers showing puce, plum or brownish-red shades.

The one defect of Scarlet Glory is the weak stem upon which the flower is supported. It is slender and too soft, consequently the flowers hang their heads. True, the back of the bloom is as bright as its face, but one cannot dispute the fact that the drooping habit is a blemish. Nevertheless, its good points outweigh this one defect, and we may either grow Scarlet Glory on standards or may stoop to lift and admire its flowers of wonderful colour on bushes.

Mrs. Beatty.—For how many years have rosarians desired a Rose of the Maréchal Niel type of vigorous, healthy constitution ? It may be prudent to reserve emphatic declarations, but I am much disposed to express the opinion that Mrs. Beatty carries us a great deal nearer the fulfilment of that desire than any other Rose, and it surprises me that it has been so quietly received.

There is high quality in the flowers of Mrs. Beatty, and the plant grows and blooms freely ; more than this I will not state at the moment, for it is enough to show cause why Mrs. Beatty should be given an extended trial. *A. J. Macself.*

HARDY FLOWER BORDER.

UROSPERMUM DALECHAMPII.

If the Hawkweeds as a race are somewhat wanting in quality, good behaviour and garden value, the subject of this note is an exception. It is a first-rate plant for a hot, dry border of gritty soil. There it will prove quite permanent and make a dense mat of rather hairy leaves above which will appear throughout the season an unbroken succession of large flowers in an attractive shade of soft lemon-yellow. As the outer rays of these blooms are backed by streaks of purple, the effect is distinctly charming, especially as the flowers close in the early evening as well as during sunless hours of the day.

U. Dalechampii does not " run," to any extent, nor is it likely to be troublesome in the way of seeding. Indeed, it does not seem to be an easy plant to raise from seed. Division is the surest means of increase, but good clumps are best left undisturbed. *J.*

BORDER CARNATIONS.

So soon as the growths are fairly firm, the layering of border Carnations may be commenced. In many cases, too many shoots are available, and a selection of the best should be made, removing those that are superfluous.

Some fine, sandy soil should be prepared in readiness, and a spadeful or more worked in about each of the plants to be layered, and a quantity of pegs made ready ; these may be made of wire, but where the Bracken is found in quantity, pegs cut from its jointed stems are quite as good, and last quite long enough to ensure the layers being well-rooted.

Care is necessary in layering to see that the slit made by the knife is kept open, that the tongue of the layer is undamaged, and that the shoot is made quite firm and erect, when pegged into position. *A. T. H.*

BOG GARDEN.

ANEMONE ELONGATA.

Although a Himalayan plant, this Anemone appears to be perfectly hardy. It comes into flower in the later summer when most others are over, putting up from a broadly-leafy base stout two-foot growths which radiate into a loose head of blossom. Individually, the flowers are rather small, barely one inch across, but they are very dainty, elegantly poised on their long, slender stalks, and pure white with a violet-blue reverse. This is a plant for the bog- or stream-side, but I have seen it doing well in good border soil that is fairly cool. A. elongata is apparently a close ally of A. rivularis, there being little difference between them to the average eye. But the latter has larger blooms and the inflorescences are rather more compact owing to the flower-stalks being shorter. *J.*

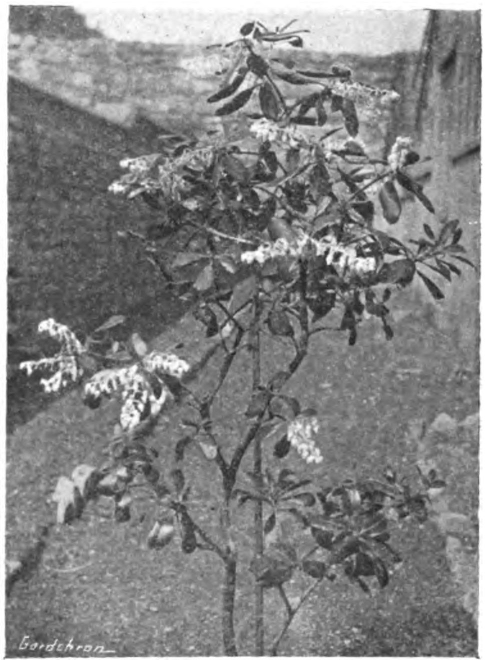


FIG. 38.—ARCTOSTAPHYLOS DIVERSIFOLIA.

(see p. 71.)

MYOSOTIS WELWITSCHII.

The habit of this Forget-me-not is somewhat peculiar. When growing strongly the lower portion of the stem rises up perpendicularly to a height of three or four inches, after which the stem and branches grow horizontally. It is behaving in this way on the rockery at Wisley, in a moist position near water. Elsewhere, some years ago, I saw it growing less vigorously and close to the ground like a creeping plant.

It was introduced from Spain in 1890, but has not become very common in gardens, though it is available from some nurseries.

The flowers are of medium size and bright blue with a yellow eye, fading somewhat with age. The bog garden, when the soil is just kept moist from beneath, would seem to be the best place for it, and a good patch of it would not be without interest for it flowers freely over a long period. *J. F.*

ALPINE GARDEN.

HELICHRYSUM BELLIDIOIDES.

This New Zealand Composite is very effective when planted on a sunny ledge in the rock garden, in well-drained, sandy soil. The rapidly-trailing, silvery stems bear a profusion of dainty, pure white, Daisy-like, everlasting flowers in May and June.

The sunniest spot should be selected for this plant, and, as it is somewhat susceptible to damp, a surfacing of chippings and the protection, during the winter months, of a sheet of glass will be advisable.

It is an excellent plant for furnishing a pan for the alpine house. Propagation is effected by cuttings inserted during the summer. *Ralph E. Arnold.*

CISTUS SILVER PINK.

In your leading article of July 10, on " The Caprices of the Season," you mention, amongst other Cistuses, our hybrid Silver Pink, under the incorrect name of Silver Queen.

This pretty, clear-pink hybrid was raised in 1914 in our West Hill Nursery from a chance seedling and is probably a cross between C. crispus and C. laurifolius. It gained an Award of Merit at the R.H.S. on June 17, 1919.

As you remark in your excellent description of this hybrid, it has the peculiarity of holding its petals through a summer's day long after those of the ordinary species have fallen. With us it is under two feet in height and never sets seed. It is fully as hardy as C. corbariense.

Strangely enough, a few years ago, a second distinct hybrid was found in our rock garden, and has recently gained an Award of Merit under the name of Cistus wintonensis. *Hillier and Sons, Winchester.*

INDOOR PLANTS.

LAVATERA TRIMESTRIS.

Loveliness is one of the best of the several varieties of this old hardy annual for cool greenhouse decoration. The large flowers are light in appearance, of a rich shade of rosy pink and particularly effective in the mass.

For a summer display, seeds should be sown thinly in pans or boxes, early in spring, placing the pans in a temperature of about 55°. So soon as the seedlings are large enough to handle they should be placed in small pots, eventually potting them into the flowering pots, six inches in diameter, using a light, rich compost, and feeding the roots when established. It is a quick-growing subject, and from the seedling stage should be grown in cool conditions. A neat stake should be placed to each plant, to which the lateral shoots should be looped. *Fred W. Jeffery.*

CLERODENDRON THOMSONAE.

This popular species is generally regarded as a stove climber, and treated as such ; it is, however, an excellent plant for furnishing the conservatory during the summer, and for this purpose it should be grown in large pots, giving it the same treatment as plants intended for the stove. They should be kept on the dry side during the winter, pruned back and started into growth early in the year.

Where it is desired to raise a stock of plants for this purpose, cuttings inserted now will root readily in a warm propagating case. They should be kept growing steadily on throughout the winter, when they should make useful plants for next year. As they increase in size they are of increasing value for the greenhouse.

FICUS MACROPHYLLA.

This Ficus is very useful for greenhouse and decorative purposes generally, being a much more graceful plant than F. elastica. This species also has the advantage of branching freely, and when grown on in large pots makes fine specimens for the conservatory. Ficus macrophylla is easily propagated by means of cuttings made of shoots about six inches long. The cuttings are best inserted singly in small pots and plunged in a warm propagating case. *J. Coutts.*

BOTRYTIS AND NARCISSUS.

UNDER the heading "A Sclerotial Disease of Narcissus," a short description of what seemed to be a new disease of these plants appeared in *The Gardeners' Chronicle*, vol. lxxv, p. 160, 1924. Since that time the matter has been more fully investigated at Wisley, and it is thought that the information gained is worth placing on record.

In the spring of 1925 and again in 1926 Narcissus bulbs affected in a similar manner to that described in my previous article were received from more than one source. The illustrations in Figs. 39 and 40 show the appearance of the interior scales of some of these bulbs when dry. The black sclerotia (resting bodies) of the fungus are on the average about 1/16-inch across, though much smaller ones also occur, and in some cases others are joined together into elongated sclerotial masses, half-an-inch long.

So far as I know, these sclerotia are found only on imported bulbs. In three instances out of four the diseased bulbs did not produce any foliage and were destroyed by the fungus. In the fourth instance, which occurred this spring, a certain amount of foliage was produced, but no blooms. The leaves were paler than normal from the start, and although they attained a fair length, very soon turned yellow at the base and afterwards withered up. When examined, these particular bulbs bore the characteristic sclerotia of the disease on the interior scales, but they were far fewer in number than in the previous instances. More sclerotia appeared after keeping the bulbs for some weeks in moist sand, and eventually the scales became completely rotten.

As mentioned in my previous account, these sclerotia develop fructifications of the Botrytis type under favourable conditions of moisture. Careful measurements of the fructifications correspond with those given by Klebahn (*) for a species of Botrytis which he discovered on Narcissus bulbs some years ago in northern Germany, and which he named Botrytis narcissicola. The same disease is known in Holland where it is called "smeul," *i.e.*, smoulder, in reference, no doubt, to the gradual yellowing and withering of the foliage from below upwards (*). Dr. Westerdijk (†) states of the disease: "This fungus attacks the Narcissus at the base of the leaves as they come above ground. The leaves soon turn brown and become withered; then the sclerotia make their appearance. The leaves wither and dry up, generally before the production of flowers. The leaves can be easily pulled off from the rotted base which distinguishes this disease from that of the bulb or of the roots." Dr. Westerdijk also refers the Botrytis concerned in the "smeul" disease to B. narcissicola. There is no doubt, therefore, that this fungus was certainly in England in 1924.

So far, the "smoulder" disease has not spread in England, and up to the present there is no record of healthy, well-established Narcissi becoming infected from diseased imported bulbs. Infection experiments carried out at Wisley on plants in pots grown under glass resulted in a failure to reproduce the disease in the bulbs. The foliage and flower stalks, however, were rapidly destroyed. When kept sufficiently moist, the characteristic sclerotia appeared on the infected parts, but were not found lower than soil level. The necks and scales of these bulbs were not attacked. Bulbs inoculated with mycelium in October and then planted did not become diseased and grew in a normal manner. Five different varieties of Narcissi were successfully infected by inoculating the mycelium of the fungus into wounds made in the leaves and flower stalks. The spores of the fungus when dusted on to wounded leaves also led to infection; but no sign of disease was produced when either spores or mycelium were laid upon the uninjured surfaces of leaves or flower stalks.

In endeavouring to find out if other plants besides the Narcissus could be infected by B. narcissicola, Tulips, Snowdrops and bulbous Irises were also inoculated with mycelium. The results showed that Tulips and bulbous Irises were not attacked, but in two consecutive seasons the foliage, flowering stems and fruits of Snowdrops were destroyed by the fungus. The Snowdrop bulbs, like those of Narcissus, remained unattacked.

The experiments carried out at Wisley and briefly indicated above emphasise the desirability of thoroughly examining imported bulbs for the presence of the black sclerotia and rejecting any which are found to be attacked. It should be noted that the sclerotia are rarely formed upon the outer, papery scales; the bulbs must be partially pulled apart in order to see if they are present on the inner scales.

During the course of this investigation, which it is hoped will be published in detail in the *Transactions of the British Mycological Society*, another disease of Narcissus was encountered which, though apparently well-known to growers, was found to be caused by a hitherto unknown fungus. This second disease is called "fire," by growers, although it has no connection with the "fire" disease of Tulips, due to Botrytis tulipae. A "fire" disease of Narcissus also occurs on the continent and is said to be due to the very common Botrytis cinerea. Dr. Westerdijk, in the same paper quoted above, states of the "fire" disease: "Also in the Narcissus fields occurs a kind of "fire," which often partially affects the leaves and always progresses very quickly from the top downwards, sometimes the leaves are destroyed in a few nights." What is known as "fire" in this country appears to be quite distinct from the continental "fire" disease.

Early in April this year, some Narcissus leaves obtained from Cornwall and from northern Ireland and said to be suffering from the "fire" disease were kept under observation at Wisley under slightly damp conditions. When received the leaves bore large, elongated, yellowish-brown spots with a greyish central portion, which might have been mistaken for those caused by Ramularia valisumbroseæ. In a few days, the dark, central portion of these spots produced the fructifications of a fungus which, when isolated, grown in pure culture and then inoculated into Narcissus leaves, gave rise to similar markings, and is probably the cause of the spotting in districts where the rainfall is relatively heavy. Infection took place both through the wounded and unwounded surfaces of the leaves when either spores or mycelium were used as the infecting material. So far, there is no evidence that the bulbs are attacked by mycelium passing down from the leaves. After the death of the foliage the fungus forms elliptical sclerotia a quarter-of-an-inch long by three-sixteenths-of-an-inch broad.

It is not so much the purpose of the second part of this note to draw attention to the disease (which appears to be well-known) as to record the discovery of the fungus concerned which is considered to be a hitherto undescribed species of Botrytis.

Except for the sclerotia and microconidia, the component parts of the fungus are unusually large, particularly the spores, some of which measure as much as 50μ in diameter. They are globular or slightly Pear-shaped and about eight of them are attached by long sterigmata to the slightly swollen head of a conidiophore. The spores have fairly prominent beaks or papillae with which they are connected to the sterigmata. The conidiophores are about one-thirty-second-of-an-inch long, stout, slightly bent or curved, and mostly unbranched. A few are provided with one or two short branches on the upper ends, but they are very easily detached and leave circular or oval scars on the main conidiophore. A few spores are borne on the end of the branches. After the detachment of the spores, which takes place at the slightest touch, some of the sterigmata proceed to grow out to form delicate hyphae if the specimen is kept sufficiently moist. The conidiophores are not very numerous and once they have appeared no others arise from the diseased spots, neither have they yet appeared in pure cultures, in which respect the fungus resembles Botrytis tulipae.

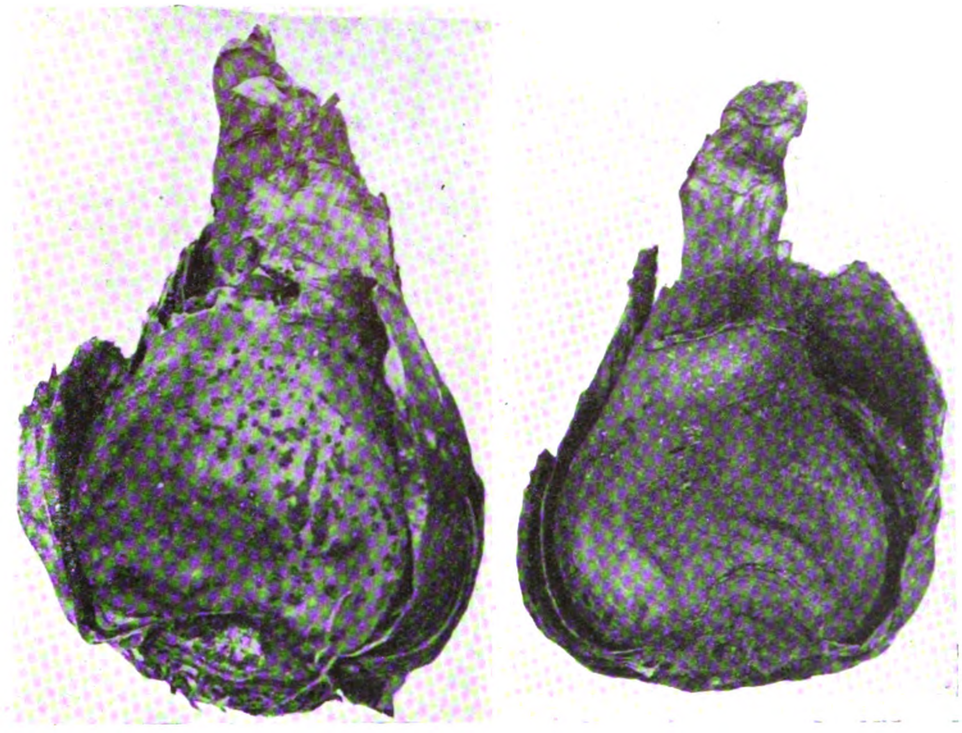


FIG. 39.—NARCISSUS BULB ATTACKED BY BOTRYTIS, SEPARATED INTO TWO PORTIONS AND SHOWING SCLEROTIA ON INNER SCALES.

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* Klebahn, H.; Jahrb. Hamburg Wissensch. Anstalten, 24, 1907, 63.

* Westerdijk, J.; Phytopath. Lab. W. C. Scholten, Jaarverslag, 1911.

† Westerdijk, J.; Phytopath. Lab. W. C. Scholten Jaarverslag, 1916.

On sowing them in a drop of water, the spores commence to germinate in about half-an-hour, producing an extraordinary number of germ tubes, so many as twelve having been counted in several instances. A full account of this interesting fungus is to be published shortly in the *Transactions of the British Mycological Society*, and it is proposed to give it the name of Botrytis polyblastis sp. nov. in reference to the unusually large number of germ tubes to which the spores give rise.

I should like to take this opportunity of recording my indebtedness to Dr. Pethybridge of the Ministry of Agriculture's Pathological Laboratory at Harpenden, for drawing my attention to the literature quoted above and for stimulating discussions regarding the second part of this article. *W. J. Dowson, Wisley.*

FORESTRY.

TREES AND FORESTRY IN DERBYSHIRE.

At and around Matlock and on the adjoining estates, tree growth is wonderfully luxuriant, the limestone formation of much of the soil, with here and there a porous subsoil of sandstone grit, being evidently well-suited to the perfect development of certain trees, notably the Oak, Elm, and Sycamore.

As showing the magnificent dimensions to which Oak trees attain, reference may be made to the ball-room floor in Haddon Hall, one of the most perfect specimens of baronial architecture now left, which was entirely boarded with the production of a single tree. By actual measurement I found the boards to be twenty-two inches wide, and in lengths up to forty feet, the graining and rich colour of which left nothing to be desired. The dining hall is also floored with similar timber; all of which was grown on the estate. The panellings of these and other rooms date from the twelfth century and are in a wonderful state of preservation. Close by the Castle walls are growing some ancient Elm and other trees, all magnificent specimens, some, however, being wind-damaged and partially hollow, but which, in their hey-dey, must have been of extraordinary size. The hollow stem of one of the largest specimens was fully six feet in internal diameter, and it was held together by props and braces. Hard by the entrance gate is growing one of the most magnificent specimens of the common Ash that it has been my privilege to measure, the height being well on to one hundred feet, while the beautifully straight and clean trunk is five feet in diameter for a length of about thirty feet, where the first branches break out.

Opposite the door, from which Dorothy Vernon is said to have eloped with Lord Manners, are over twenty remarkable Yew trees, with bulky stems and far-spreading heads of the healthiest foliage. Throughout the park are to be seen many noble specimens of native forest trees, and it is worthy of note that, in recent repairs of the building Oak from the estate has been used.

Nearly all the way from Buxton to Darleydale one passes through the beautiful and well-wooded vale in the Derwent, where the steep hill-sides are thickly clothed with thriving plantations. Some of these are of recent formation, others of much older growth, but all are in a thriving condition, while the general crops of timber are heavy and of particularly clean growth. On the lower ranges of the hill-sides I saw some unusually large specimens of Sycamore, Elm and Oak, with fine, clean stems, and containing much useful timber. Of the Elm, the measurements recorded averaged fifteen feet in girth at a yard from ground level, while many of the Sycamores contained from sixty to eighty cubic feet of wood. I was informed by a sawmiller in the district that the timber produced in this part was much sought after for its rich colour and the widely recognised lasting properties.

On the summit of High Tor I was surprised to find so fine specimens of Beech and Sycamore, particularly when the wind-swept condition of this favoured height is taken into account. The recent additions in the way of ornamental planting will add greatly to the attractions of this well-wooded eminence. What particularly impressed me was the varied and rich collection of native shrubs and wild plants that is to be seen in this neighbourhood.

At Chatsworth, those interested in tree and shrub growth will be amply rewarded for a stroll through the extensive and well-kept park grounds, where are to be seen some splendid examples of our native and other trees, including the Elm, Oak, Ash and Beech in particular. The Tulip Tree avenue in the forecourt of Chatsworth House is a greatly admired feature when the trees are in flower, while the well-balanced and unusually large weeping Ash adjoining has foliage of the brightest green, the branches sweeping the green sward for a distance of fully fifty feet in diameter. Not far distant is by far the largest weeping Sequoia (Wellingtonia) that I have seen, the height being well on to sixty feet. There are many other rare Coniferous trees, but the hard-wooded species are conspicuous by reason of their large size in every part of the park.

The beautiful vale of Matlock contains much to interest the lover of native trees, while the famous Darley Dale Yew tree, near by, is widely acknowledged to be the largest and oldest of its kind in this country. Owing to the deeply fluted and otherwise irregularly shaped trunk, it is somewhat difficult to give exact measurements of this patriarchal specimen, which occupies an open situation directly in front of the church entrance. It is pleasant to state that this famous Yew is in a healthy and thriving condition, though several large limbs have at various times been broken off by the force of the storms to which this part of Derbyshire is frequently subjected. The filling of some of these scars with suitable materials, either concrete or Macadam, in order to keep out damp and prevent fungous attacks, would certainly be beneficial and undoubtedly add to the preservation of this very old tree. It is well-preserved from injury, whether by man or beast, by the stout iron fence with which it is surrounded. Many measurements of the Darley Dale Yew tree have been taken, all varying from each other so far as girth of stem is concerned, the actual tape record at two feet and five feet from ground level being thirty feet two inches, and thirty feet ten inches, respectively, while the symmetrical and far-spreading head of branches has a diameter of sixty-six feet.

The Peak district is, in parts, well-wooded, especially in and around Buxton, where the trees are well-grown and of considerable size when the elevation of this famous health resort is taken into account. At Lea Hurst, the home of the late Florence Nightingale, and in Dove Dale, celebrated for its well-wooded scenery and associations with Izaak Walton, are many trees of remarkable proportions and historic interest.

Adjoining Wingerworth Hall Park, a Middle Ages mansion, some splendid timber trees have lately been felled by a Matlock timber merchant, the wood of one of the largest Oaks which girthed eighteen feet round the butt and weighed fifteen tons, being now used in work of reconstruction at the ancient parish church at Bakewell. It is interesting to learn that over two hundred acres of land, from which timber has recently been removed, is being offered for sale at twopence per square yard. *A. D. Webster.*

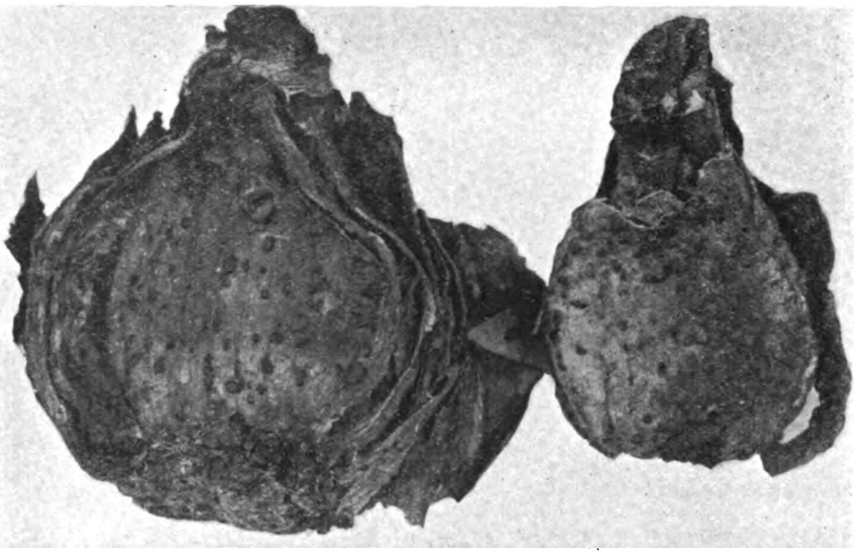

FIG. 40.—NARCISSUS BULB ATTACKED BY BOTRYTIS, SEPARATED INTO TWO PORTIONS AND SHOWING SCLEROTIA ON INNER SCALES.

BULB GARDEN.

TIGRIDIA PAVONIA.

Few bulbous plants are so gorgeously beautiful during the summer as this Mexican Irid, and where a warm border can be found for it no difficulties of culture arise.

It grows best in a light, rich soil at the foot of a wall, preferably with a southern aspect, and in such a position the bulbs may be left for a number of years. It is usual to lift the bulbs in the autumn, but they are apt to suffer if stored too dry, and I find that they grow and flower more freely if left in the ground permanently, hence the desirability of a warm border where there is little danger of frost penetrating to the bulbs. Should weather of unusual severity occur, a little dry litter affords them all the protection they need.

There are several varieties, all of which grow to a height of about one foot. T. P. conchiflora has yellow petals and cup, the latter heavily spotted with scarlet; T. P. grandiflora rubra is very handsome with rich scarlet petals and cup spotted crimson on a yellow ground, whilst T. P. grandiflora alba has pure white petals with cup spotted ruby. In normal seasons seeds set freely and propagation may be effected by this means. *A. P. C.*

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THE SWAMP CYPRESSES.

OUR knowledge of the peculiar group of Conifers, known as the Swamp Cypresses, has recently been much extended by the researches of Professor Augustine Henry, assisted by Mrs. Marion McIntyre.[*] Reference to this work has already been made (*Gard. Chron.*, vol. lxxix., April 24, p. 309), but some further remarks may be of interest considering the debatable points raised or suggested.

Taxodium distichum, a valuable timber tree of the south-east of North America, is well-known botanically and arboriculturally. It is capable of assuming stately dimensions in the south of England, witness, for example the fine trees as Syon House. It is pointed out in the memoir that the form of some rarity, known as Taxodium adscendens, occurring in the same region of America, is probably merely a sport, bearing the same relation to T. distichum as Cryptomeria elegans does to C. japonica. Taxodium mucronatum of Mexico, however, is regarded as a second living species of the genus inhabiting a distinct geographical area. It differs from T. distichum in being evergreen, and may for this reason be nearer the ancient type.

The Swamp Cypresses illustrate one of the best known examples of discontinuous geographical distribution, namely, the occurrence of closely related plants in the south-east of North America and the far east of Asia, and their absence elsewhere. The Asiatic representative of the Swamp Cypress, though at one time reckoned as a species of Taxodium (T. heterophyllum) has for some years been recognised as belonging to a distinct but closely allied genus, Glyptostrobus. The authors amply confirm this by the examination of fresh material received from China, and state that according to the accepted rules of nomenclature, the name of this tree should be Glyptostrobus pensilis instead of G. heterophyllus. This is a little unfortunate as the latter name is the more appropriate, considering the tree bears three different kinds of leaves.

In the case of Glyptostrobus superstition has, perhaps, here been a blessing in disguise, for it has probably been the means of saving this tree from extinction. It is unknown in the wild state and only occurs cultivated in two localities of south-east China. It is planted along water-courses to counteract evil influences, so as to bring good luck to the Rice crops. We are thus indebted to the Chinese for preserving a remarkable Conifer, just as we are to them for the preservation of the most interesting of all extant trees, from the geological aspect, *i.e.*, Ginkgo biloba (the Maidenhair Tree). It has never yet, I believe, been found growing truly wild.

Glyptostrobus is considered by Professor Henry to be a more ancient type than Taxodium, and probably originated in a warmer climate. Both genera are well-known in the fossil state, and interesting facts are brought to light regarding the past history of Glyptostrobus. Fossil remains have been found throughout the Tertiary strata and show that the genus had a wide distribution in the past in the regions now known as the north temperate and frigid zones. The recurrence of Glyptostrobus in the Mesozoic period is still uncertain. Some fossil twigs and leaves from Cretaceous rocks have been assigned to this genus, but in the absence of cones the identification with Glyptostrobus must remain doubtful. All the Tertiary specimens are referable to one species, and the question is put: In what does it differ from the living one? It is considered that there is no essential difference, and that "it is possible that the tree now on the verge of extinction in China is the Tertiary species unchanged." It is arresting to find such a view expressed, as one is often led to regard all living species as distinct from their forerunners in pre-glacial times. Both Ginkgo and Cryptomeria (another Coniferous monotype confined to the Far East), differing little, if at all, from the existing species, have also been found in the older (Eocene) Tertiary strata. The incoming of the Ice Age at the end of the last great geological epoch affords a satisfactory explanation of the restricted distribution of these Coniferous genera at the present time.

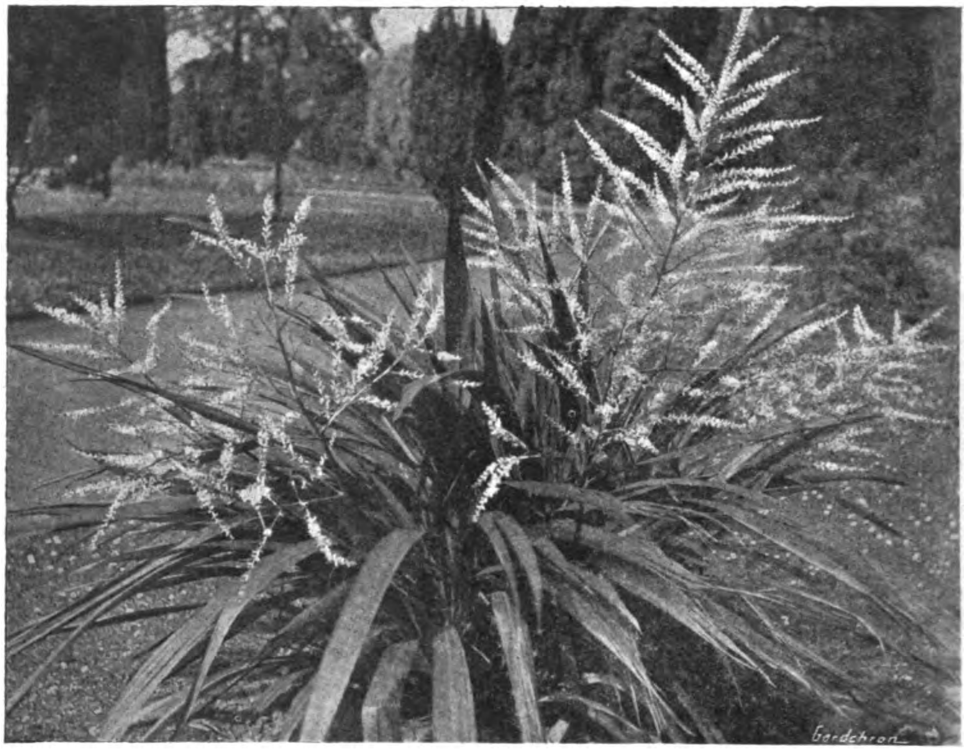

FIG. 41.—CORDYLINE BANKSII FLOWERING AT GLASNEVIN.
(see p. 71).

The authors point out that fossil Coniferous woods are difficult to discriminate. To help in this direction they have undertaken a macroscopic and microscopic study of the wood of four living species, viz., Glyptostrobus pensilis, Taxodium distichum, Sequoia sempervirens and Wellingtonia gigantea—which typify four allied genera that turn up frequently in the fossil state. These details, illustrated by clear drawings, should be of particular service to palaeontologists.

Unlike Taxodium, Glyptostrobus is not amenable to cultivation in Great Britain, being sub-tropical. However, one hopes such an interesting tree will receive arboricultural attention elsewhere than in south-east China, and that any fear of its extinction may be circumvented. This has been done in the case of the valuable true Cypress, Cupressus macrocarpa, which, by a happy chance, had managed to hold out on a small, wind-swept peninsula in California, until civilised man came on the scene and rescued it, as it were, from its precarious position. Why such a vigorous and easily seed-propagated Conifer should have reached the borders of extinction is strange.

The Swamp Cypresses are interesting in supplying instances of deciduous Conifers. This character is remarkable for its rarity among the Coniferae. The Larches are the most familiar examples. Beside Larix, the only other deciduous genera are the closely allied Pseudolarix, consisting of a single species confined to China, and the subjects of this article. The Swamp Cypresses not only shed their needles (leaves) in the autumn, but some of their stems as well. Others persist to form the permanent branch-system of the tree. Taxodium distichum is wholly deciduous, but Glyptostrobus is only partially so, conforming to the general rule that—taking any related group of trees—the Oaks, for example—the further the species are from the tropics the more deciduous the habit.

One of the most striking features of the Swamp Cypresses is the protrusion above the surface of the water of stout, knee-like growths, originating from the roots. These are regarded as breathing organs, thus allowing the tree to grow in swampy ground where there is a lack of oxygen. They are comparable to the breathing roots of Mangroves. The knees of Taxodium are straight, while those of Glyptostrobus are curved. These latter are well illustrated in the paper by a plate taken from a photograph.

It may be that this type of Conifer has managed to persist in adapting itself to peculiar conditions. It is the nearest approach to the aquatic habit among the Coniferae. Considering the great diversity of habit there is among the flowering plants (Angiosperms) it is somewhat remarkable to find the Conifers so uniform in this respect. The herbaceous habit is completely absent, and the tree form almost universal, only departed from in a few mountain species where the conditions have brought about a stunted, shrubby, and sometimes prostrate, mode of growth. *J. Parkin.*

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[*] *Proc. Roy. Irish Academy*, xxxvii., B 13. pp. 90-116 1926.

NOTES FROM GLASNEVIN.

CORDYLINE BANKSII.

APPARENTLY this is a Cordyline year, for never have they flowered more freely or so generally throughout these islands. Most of the references so far, have been to the broad-leaved form of C. australis, and a well-flowered specimen is a striking object, as shown in recent issues of *The Gardeners' Chronicle*.

The narrower, brown-leaved C. lentiginosa, now regarded as a variety of C. australis, is also flowering here, the inflorescence closely resembling that of the type. The chief merit of the variety as an ornamental plant lies in the reddish-brown colour of the leaves which renders it effective as a pot plant or as a specimen in the open. Here it is growing in a narrow border in front of the Palm house and has reached a height of ten feet, but it is probably quite as hardy as the green form.

In contrast to the stem-forming species C. Banksii (Fig. 41) makes tufts of long, handsome leaves arising from a short stem not far above ground level. The inflorescence, which arises from the axils of the upper leaves and pushes up between them, is much longer than that of C. australis, the branches longer and wider apart, so that the individual flowers, though small, are better displayed; the peduncles are green and the flowers pure white. The variety erythrorachis, with bright red midrib to the leaf, is a rare and beautiful plant, but not, apparently, so easy to establish.

SENECIO SMITHII.

This is a handsome, herbaceous species (Fig. 42) attaining a height of four feet to five feet, but must have thoroughly moist conditions in which to grow really well. Here it does best in a bog, within a few feet of a pond, where it is frequently submerged in winter. The largest leaves are up to a foot long with a stout stalk, the edge of the leaf blade coarsely toothed. The heads are produced in a corymb terminating a stout, erect stem; the ray flowers are pure white, and the central flowers yellow, giving the appearance of a cluster of large "Daisies." A native of the Magellanic region, S. Smithii was first discovered in 1769, and was also found later in the Falkland Islands, whence seeds were sent to Kew in 1895. There is an excellent figure of this plant in *Bot. Mag.*, t. 7,531.

OXALIS MAGELLANICA.

Also from the Magellanic region, this tiny species (Fig. 43) never fails to attract attention. It flourishes in a cool, moist position not too much exposed to the sun. The best group here is growing quite at the base of the rock-work in soil always moist, and in a position facing east, not shaded overhead. Here it has formed a dense mat of interlaced rhizomes bearing tufts of tiny, trifoliate leaves on slender petioles. Each leaflet is deeply notched, forming two lobes. The flowers are pure white and carried on slender stalks just above the leaves. The total height is scarcely more than a couple of inches. Seeds are freely produced and propagation by division is easy.

ARCTOSTAPHLOS DIVERSIFOLIA.

THIS is an uncommon species in cultivation but it might be worth introducing to the milder parts of the country. It is a native of the southern parts of California, and hence is not likely to be hardy where severe frost is usual. One plant was tried out-of-doors at Glasnevin some years ago but it failed to become established although given the protection of a wall; it might, however, require more shade than it received in that particular position, where it was also liable to become affected by lime.

The only specimen now at Glasnevin is in a pot and flowers annually (Fig. 38). The leaves are firm and leathery, varying from broadly lanceolate to oblong spathulate, dark green and smooth above, grey floccose below, with margins rather irregularly spinulosely toothed. The racemes are two or three together, sometimes only one; the peduncle, pedicels, calyx and corolla are furnished with soft white hairs and the divisions of the calyx are awl-shaped. The corolla is pure white with the minute divisions slightly recurved. *J. W. Besant, Glasnevin.*

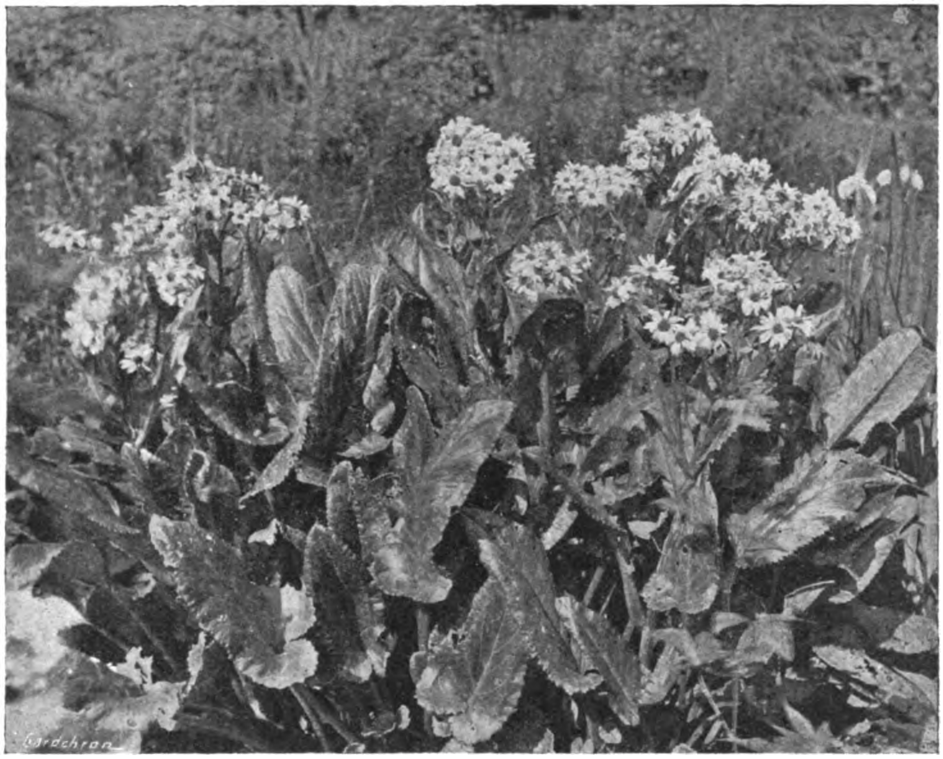

FIG. 42.—SENECIO SMITHII AT GLASNEVIN.

NOTES FROM WISLEY.

Now that many of the flower trials at Wisley are over, or have passed their best, the various fruit crops should be a source of interest to visitors, particularly the commercial fruit trials which are being conducted by the side of the new Rose borders.

Included in these trials are some Black Currants the berries of which are very large and the crop an exceptionally heavy one, notwithstanding that crops of this fruit are rather poor this year in most districts. The Raspberries in these trials are also good and the growth of the young orchard trees has been very satisfactory. Of the fruits under glass there is an abundance of Peaches and Nectarines, and, as usual, there is a heavy crop of Grapes in the vinery.

In the rock garden the bright colours of the rock plants are further augmented by the flowering of shrubs, such as Cistus purpureus, C. crispus and many other showy members of the Rock Rose family, while another rock garden shrub which is making a bright display is the double-flowered form of Genista tinctoria. Wild plants of the latter, which is known as Woad Waxen or Dyer's Greenweed, were formerly gathered by poor people during this month and sold to dyers who used the tops for the purpose of giving a yellow colour to yarn.

Campanulas are in bloom in great variety on the rock garden, some of the best of which include the pale blue-flowered Miss Willmott, Campanula barbata and C. Bellardii var. Miranda which, although only planted out in March is already making a good show. Another Campanula recently planted in the reconstructed portion of the rock garden, and which has quickly established itself, is C. garganica hirsuta, plants of which are fixed in a vertical crevice and are rapidly covering the rock face.

A bright yellow carpet is formed by the flowers of Achillea tomentosa, of which there is a cream-coloured form named King Edward. Another attractive yellow-flowered plant growing in the rock garden is Calceolaria John Innes. It is a rather large-flowered perennial which seems to be hardy. Relatives of the Evening Primrose are seen in Oenothera Nuttallii, a low-growing, yellow-flowered species, and in the better-known O. speciosa, which has white blossoms that turn pink as they age.

In the moraine, Primula Loczyi and P. tibetica seem quite at home and are flowering in company with Cortusa pubens, Saxifraga turfosa and Wahlenbergia dalmatica. Here also, a tiny Viola species, V. valderia, with pale violet flowers, is in bloom

The tree of Salix alba (regalis), near the foot of the rock garden, is now recovering from the vigorous pruning which became necessary, and is once more presenting a good head of silver foliage. Another ornamental-foliaged Willow, the vigour of which may also have to be curbed in the interest of surrounding rock plants, is Salix Caprea tricolor. This plant is to be seen close to the one-hundred-year-old stunted Larix imported from Japan, which is bearing an unusually large number of cones this year.

In the alpine house Campanulas are as prominent as they are in the open, one of the prettiest of which is Campanula Elatines, a native of southern Italy. Its flowers show considerable variation in colour. Campanula excisa is a very frail Bell-flower, the corolla of which is an unusual shape. Among other plants in flower in this house are Saxifraga Brunoniana which is throwing out hundreds of wiry, red runners, Sempervivum annuum and the charming, pink-flowered Acantholimum venustum.

Many of the annuals on trial are in full bloom, including the Linums and the Nemophilas. Among the former, Linum grandiflorum rubrum is by far the most showy, while among the latter **Nemophila insignis** is probably the most useful variety for garden decoration. The flowers of most of the other sorts of Nemophila, such as N. discoidalis and N. atomaria, while individually interesting, are not effective in the mass. A possible exception is Nemophila maculata with white flowers, each petal of which is marked with a violet patch.

The first flowering of the Delphiniums on trial is nearly over, but good spikes of Violet Queen and of pale silvery blue varieties, such as Marjorie Ferguson are still to be seen, while in the dwarfer section one of the best is Orion, which may be described as a much improved Mrs. Brunton, having larger flowers and a whiter centre. The heated tank, situated outside the laboratory, which contains Nymphaea stellata (Berlin variety), was cleaned out during the past winter, and the number of the plants considerably reduced, but this has in no way impaired the flowering of this beautiful blue Water-lily. It is now blooming as freely as ever, and many of the flower stems project as much as eighteen inches out of the water. In the other Lily tank, Nymphaea James Brydon is rapidly covering the water with its purple leaves and pink flowers.

A shrub which has flowered extremely well is Spiraea Henryi, a native of China. It is quite hardy here, making plants of good size and in June producing a wealth of white flowers which, in association with the rather ornamental foliage, renders it a shrub of great value in the garden

At the present time, Phlomis fruticosa is an object of great interest, its whorls of fine yellow flowers, and its grey foliage making it quite distinct among garden plants. The Jerusalem Sage is an old denizen of our gardens, for it was introduced from the Mediterranean regions in 1596.

In the rock garden, two Sedums deserve notice. One is S. Ellacombianum, with irregularly-toothed, yellowish-green leaves and bright yellow flowers, which it produces in profusion. It is neat and fairly compact in habit, making big tufts of golden yellow which are valuable either in the rock garden or for the front of a mixed border. The other plant is S. Praegerianum, which is rather unique in its habit. The stems radiate from a central point and the dark green leaves are arranged alternately on them. The pink flowers, green leaves, red stems, and its peculiar habit render this Sedum a treasure among plants.

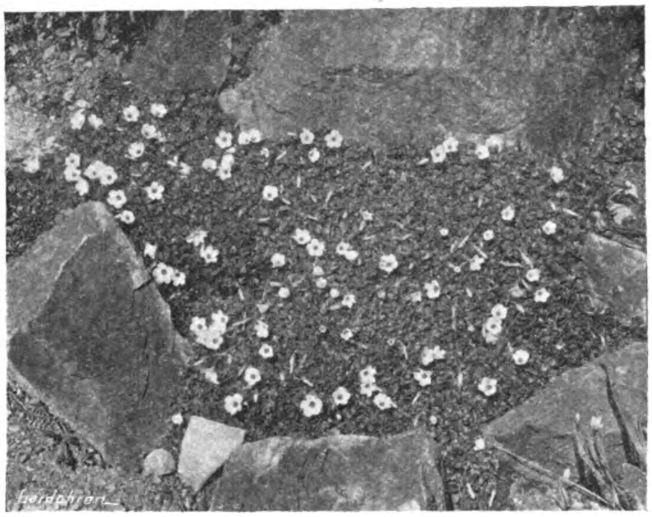

FIG. 43.—OXALIS MAGELLANICA AT GLASNEVIN.
(see p. 71).

Against the walls of the laboratory the blue-flowered Ceratostigma Willmottianum is in flower, and a number of Fuchsias, such as Ballet Girl, Marinka and Scarcity, have been planted out. A good show of flowers is seen in the herbaceous borders, and growing in the ditch behind them are some patches of Lysimachia punctata (Fig. 37). This plant is seldom seen in gardens, the reason for which is hard to explain, since its yellow flowers are very effective in the mass and it is by no means a difficult subject to grow. *J. E. Grant White.*

NOTES FROM ABERDEEN.

Throughout the month of June one of the features of the Cruikshank Botanic Garden was the fine display made by shrubs representing the genera Deutzia, Philadelphus and Weigelia—or Diervilla, as it is more correctly known. Representatives of the first two genera well repay the time devoted to pruning them, and this operation should be performed so soon as flowering has concluded. Pruning consists in thinning out and cutting back shoots that have flowered, to within a few inches of the old wood. Diervillas require little pruning, but if there are any straggling shoots these may be safely cut back when flowering is over.

The herbaceous border is at the present time at its best, but its contents are not all strictly herbaceous. One of its most distinguishing features is the display made by Lilium tigrinum of its rich orange flowers the odour of which many would consider rather unpleasant. It is certainly strong. Another notable inhabitant of this border is Aster brachytrichus, a species with orange-yellow disc florets, and mauve ray florets. It has hairy stems up to a foot-and-a-half in height, which, like the somewhat coarse foliage, are hairy. The plant is free-flowering, and should be grown in a mass, when it is very effective and suitable for the front or for the second row of the border.

It may be of interest to record that Gunnera manicata grows well here in a sheltered corner, and its large and curious inflorescences are now in evidence. Even in the south this plant requires protection in the winter months.

Many species of Primula of recent introduction have been planted on the terraces in the sunk garden, but the most notable of them is P. reticulata. The plant here grown is true to type. The leaves are rich dark green and stand rather erect. The flower clusters are carried on long, mealy stems, some twelve to eighteen inches, and sometimes more, in length. The flowers are large and pendent and of a pale yellow, set in a mealy calyx, and, furthermore are fragrant. A large group of this species, such as is grown here, is extremely effective when in full flower. *Robert H. Jeffers.*

MESEMBRYANTHEMUM.

(*Continued from p.* 35.)

8.—CHEIRIDOPSIS. N. E. Br.

C. Roodiae, N. E. Br. (Figs. 44 and 45).—Growths of newly imported plants borne on short, branching, moderately stout stems, densely clothed with the remains of old brown sheaths; each growth on the plant seen with 2-3 pairs of leaves, the lower pair diverging, united at the base into a body or sheath 6-8 lines long, 6 to 10 lines broad and 5-7½ lines thick, with the free part 1¼-2 inches long, 5-6 lines broad, and 4-5½ lines thick at the base, flat on the face, and there gradually tapering from the base to a subacute apex, obtusely or subacutely keeled all down the back; the second pair of leaves are very much more slender, erect, and closed together in the form of a linear beak, 1½-2¼ inches long, 3-4 lines broad and 1½-2¼ lines thick, somewhat obtuse in side view, but each leaf composing the "beak" minutely apiculate at the apex, and with a subpellucid keel; surface of both pairs of leaves smooth, glabrous, pale glaucous-green or whitish green, with continuous subpellucid edges and keel when viewed against a strong light; not visibly dotted, even under a lens, unless viewed against a strong light, when a rather scanty sprinkling of pellucid dots are visible. Flowers and fruit unknown.

Van Rhynsdorp Division: Locality unknown. Mrs. E. Rood!

I received this plant from Mrs. Rood without information as to its origin, and have much pleasure in naming it after her.

It is well distinguished from all other species by its sturdy habit and the absence of dots from its leaves as viewed in ordinary light.

C. rostrata, N. E. Br.—Growths with 1-3 pairs of leaves, 2-3½ inches long, the lower or primary pair stouter than the others and spreading, 6-8 lines broad and 4-5 lines thick at the base where they are united into a sheath about six lines long and 8-9 lines thick, flat on the face which tapers from the base to an acute apex, rounded on the back at the basal part, keeled above, in side view abruptly rounded in from the keel to the minutely apiculate apex: the next pair are much more slender, and much more pointed in side view, and at the base are united into a sheath, 9-10 lines long embracing the third pair, which have their flat faces closely pressed together so that they somewhat resemble a bird's beak; this pair are of the same form as the primary pair, and after passing through the resting stage become a primary pair in their turn: surface of all smooth, glabrous, except at the very minutely ciliate edges and keel, glaucous-green, dotted with dark green on the back and along the margins and keel, but not on the flat face, and on the stouter leaves the dotting is often chiefly at the apical part; the keel at the apex of the stouter leaves is somewhat pellucid and slightly rough. Pedicel 2-2½ inches long, erect, terete, green. Calyx unequally 4-lobed; the two longer lobes 8-12 lines long, leafy. Corolla about 1½ inch in diameter, opening before midday and closing between 4 and 5 p.m., lasting about two weeks; petals numerous, clear yellow. Stamens numerous, erect, white? Stigmas 8, about 2 lines long and finally longer than the stamens, connivent until the petals fade, then ascending-spreading, plumose.

Mesembryanthemum rostratum, Linn. *Sp. Pl.*, ed. 1, p. 486 (1753), and N. E. Br. in *Journ. Linn. Soc. Bot.*, vol. XLV. p. 85, t. 8, Figs. 29-31, and t. 9, Fig. 32 (as M. quadrifidum), not of other authors. M. quadrifidum, Haw. *Misc. Nat.*, p. 28 (1803), *Synop. Pl. Succ.*, p. 212, and *Rev. Pl. Succ.*, p. 91: Ait. *Hort. Kew.*, ed. 2, vol. III, p. 216; Sonder in *Fl. Cap.*, vol. II., p. 394; and Berger, *Mesemb.* p. 257. M. rostrum ardeae referens, Dillen. *Hort. Elth.*, p. 240, t. 186, f. 229 (1732).

South Africa: Locality and collector unknown.

This plant has long been in cultivation, but is often confused with C. tuberculata, which is similar in appearance, but more slender in its growths and has its leaves more conspicuously dotted all over, with the dots usually slightly prominent, which they are not in C. rostrata.

I have only seen one partly withered flower of this species, kindly sent to me by Mr. T. M. Endean, of Laindon, from which I have made the above description. As in the case of those of C. tuberculata, the stigmas are at first all closely pressed together into a spire-like column, only separating and spreading after the flower has been open some days and the petals begin to wither.

C. tuberculata, N. E. Br.—Growths with 1–3 pairs of leaves, in general character resembling those of C. rostrata, but longer, more slender, and more acute in side view, being 2½–4½ inches long, 4–5 lines broad and 2½–3½ lines thick at the base, where the outer pair are united for about half-an inch, and the second pair for 1–1½ inch; surface usually with slightly prominent dots, minutely ciliate on the edges and keel, otherwise glabrous, glaucous-green, dotted with dark green all over or less conspicuously on the flat face. Pedicel 3–4 inches long and 1½ line thick, erect, terete, green. Calyx unequally 4-5-lobed; ovary-part hemispherical; the two long lobes 4–14 lines long, leaf-like, reflexed or reflexed-spreading, the others 2–4 lines long, broadly ovate, obtuse, membranous or with short, dorsal, leaf-like tips. Corolla 1½ inch in diameter, expanding before noon and closing between 5 and 6 p.m., or earlier if the temperature is not sufficient, and lasting about two weeks; petals in about 3 series, 6–8 lines long and ⅓–½ line broad, linear, subacute, recurved-spreading and loosely overlapping, light clear yellow, shining. Stamens numerous, at first connivent, afterwards erect, unequal in length, the longer 3½–4 lines long, filaments pale yellowish, the inner series bearded at the base: anthers yellow, becoming whitish. Glands all united into a narrow crenulate ring, dark green. Stigmas 8–10, as long as or slightly overtopping the stamens, 2–2½ lines long, at first closely pressed together into a tapering column, but when the pollen is shed and the petals begin to wither they separate and are slightly spreading with recurved acute tips, plumose, pale yellowish. Ovary half-superior, very convex on the top, with 8–10 cells, green.

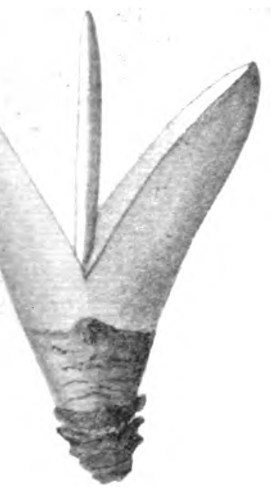

FIG. 44.—CHEIRIDOPSIS ROODIAE.

A single growth. Natural size.

Mesembryanthemum tuberculatum, Miller, *Gard. Dict.*, ed. 8, No. 32; and N. E. Br. in *Journ. Linn. Soc. Bot.*, vol. XLV, p. 87, t. 6, Figs. 12-13 (1920). M. rostratum, Salm Dyck, *Mesemb.* § 3, fig. 7; and Berger, *Mesemb.*, p. 256, fig. 55, I-III, not of Linné.

South Africa: Locality and collector unknown.

This species is commonly cultivated under the name of Mesembryanthemum rostratum, for which it was mistaken by Salm Dyck and subsequent authors. But it is readily distinguished from the true C. rostrata by its much more slender leaves, that are more conspicuously dotted all over, and particularly by the dots being more or less prominent on some of the leaves, from which character Miller gave it the name of M. tuberculatum.

C. ventricosa N. E. Br.—Plant forming clumps with branches 3–18 lines long arising from the top of a firm rootstock. Each branch bearing a single growth with 1–2 pairs of leaves, and often with branchlets in the axils of the outer pair, and clothed at the base with 3–4 large, dry, chestnut-brown sheaths 6–9 lines long and 7–10 lines in diameter, the remains of previous growths. Outer leaves ascending or spreading and the inner pair erect with their flat faces closed together for a period; 1½–3 inches long, 6–7 lines broad and 5–6 lines thick at the basal part, where they are united into a sheath 5–9 lines long, flat or very slightly convex above, obtusely keeled on the back, gradually tapering from the base to an acute or subacute apex; surface somewhat harshly velvety to the touch, being densely covered with microscopic points visible under a lens, glaucous-green or whitish-green. Peduncles 9–24 lines long, 1-flowered, bracteate at the middle. Bracts with the free part 6–10 lines long, united below into a ventricose or swollen sheath, harshly velvety like the leaves. Calyx unequally 5-lobed; lobes 6–9 lines long, linear-lanceolate, acute or apiculate, three of them with narrow, membranous margins. Petals in 3–4 series, 7–12 lines long, 1–2 lines broad, spathulate and acute or linear-spathulate and acuminate, rosy-purple, striped with purple towards the base. Stamens subdiffuse or the inner incurved, 2½–5 lines long; filaments not bearded, rosy; anthers yellow. Disk annular, crenulate. Stigmas 4–6, about 1½ line long, broadly subulate, abruptly apiculate-acuminate. Ovary convex at the top. Capsule when closed 4½–6 lines in diameter, shortly and broadly obconic, flattish and with 4–6 ridges about 1½ line high on the top, glabrous, hard and rigid, greyish, with 4–6 valves and cells; when expanded 8–9 lines in diameter; valves about 2–2½ lines long and 3–3½ lines broad, broadly deltoid, spreading horizontally, with the expanding-keels much shorter than the valve, widely separated throughout their length, being ½ line apart at the base, thence diverging, straight, acute, without membranous wings, chestnut-brown; cells acutely roofed with rather stiff brown cell wings, and with a large whitish tubercule nearly closing the opening. Seeds not numerous in each cell, rather large, about ¾ line long, compressed-ovoid, with a point at one end, smooth, light brown.

Mesembryanthemum ventricosum, L. Bolus in *Ann. Bolus Herb.*, vol. III, p. 128 (Sept. 1922).

Clanwilliam Division: near Clanwilliam, Pillans 1595. Van Rhynsdorp Division: near Van Rhynsdorp, Mrs. E. Rood.

The above description is compiled partly from a living plant and partly from Mrs. Bolus' description, for I have not seen flowers of it. Mrs. Bolus states "About April growth is resumed and by June the leaves are full-grown and have split the encasing sheaths of the previous year's leaves apart."

This species is described by Mrs. Bolus as "glaberrimum" (very glabrous), I do not find it so, however, but covered with a minute pubescence of stiff, soft points, not distinct hairs.

I place this plant under the genus Cheiridopsis with very considerable doubt as to whether it should really be placed here, for although the vegetative characters are like those of Cheiridopsis the capsule is harder, with only 4–6 valves and cells, has very much deeper ridges on the top of it, and has quite a different appearance from that of any other species of Cheiridopsis I have seen. When its flowers can be properly compared with those of various species of Cheiridopsis possibly other differences may be found and a fresh genus made for its reception. *N. E. Brown.*

(*To be continued.*)

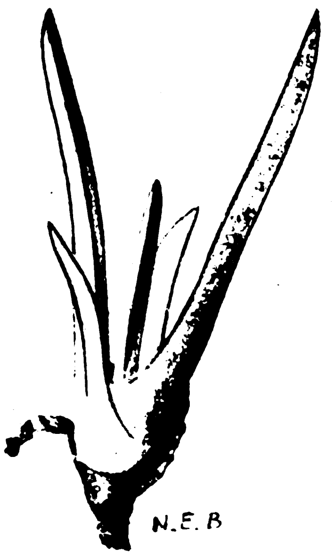

FIG. 45.—CHEIRIDOPSIS ROODIAE.

Showing growth altered by cultivation.

INTERVARIETAL DIFFERENCES IN THE POTATO.

(*Continued from p.* 55.)

II.

THE FLORAL PARTS OF THE POTATO.

There is a widespread impression that the flowering of cultivated Potatos is not general, but it should be recorded that, with one exception, all Potato plants, which have been examined during the various phases of growth, have developed flowers or at least produced rudimentary flower-buds. The exception occurs in the case of true wildings, on which floral parts are seldom observed.

(A).—Morphology of the Flowers and Fruit.

(*a*) *Peduncles and Pedicels* (*Inflorescence and Flower Stalks*).—Potato flowers occur in cymose inflorescences (Fig. 46). In some varieties, however, the main branches of the inflorescences are shortened to such an extent as to impart an umbel appearance; such types are found on Arran Rose, Dunvegan and Immune Ashleaf. The peduncles and pedicels vary in length and colouring with the variety, *e.g.*, in Up-to-Date and British Queen they are long and fairly dark-coloured, while in Royal Kidney and Arran Chief they are short and lighter in colour. There is a tendency on the part of some varieties to form leafy bracts on the inflorescence stalks, *e.g.*, Lord Rosebery, Marvel, Dominion and Millar's Beauty. Often, owing to a proliferation of buds, the whole floral structure is malformed and confused, a characteristic which is specially common in Findlay's varieties, Katie Glover and Celt. The density and distribution of hairs on the inflorescence stalks are also features of great importance in differentiating varieties, *e.g.*, in Kerr's Pink the hairs on the mature plant are numerous and adpressed, while in Reading Russet and the red-tubered variety substituted for Kerr's Pink the hairs are few and upstanding. Quite visible on the upper half of the pedicels is a distinct ring of corky tissue which indicates the point from which the flower or fruit falls. The varying colour of this ring is sometimes a useful identification mark, *e.g.*, in Rector, where it is red.

(*b*) *Calyx* (*Sepals*).—The calyx is inferior. There are five sepals united at the base, their tips remaining free. Irregularity in number of sepals appears in some varieties, *e.g.*, in May

Queen. Sepals may be uniformly coloured, as in Fortyfold and Keay's Champion, where they are green, and in Di Vernon and Myatt's Ashleaf, where they are brownish purple. Frequently, however, the basal portion is green and the tips brownish, *e.g.*, Golden Wonder and Royal Kidney. The reverse condition occurs in such varieties as Ninetyfold and K. of K. A characteristic of great diagnostic value is the length of the sepal tips; the majority of varieties have short tips, hence the long tips of Witchhill, Arran Victory and other varieties are useful for identifying these varieties. All sepals are hairy on the outer surfaces and the condition of these hairs is often useful; they may be long or short, numerous or few, adpressed or outstanding; in the variety Keppleston Kidney the hairs are infrequent and lie closely on to the sepals; on the other hand, in the variety Utility, the hairs are long, numerous and spread out. The comparison should be made with full-grown sepals; in some varieties the outstanding condition of the hairs is not visible during the early stages of growth.

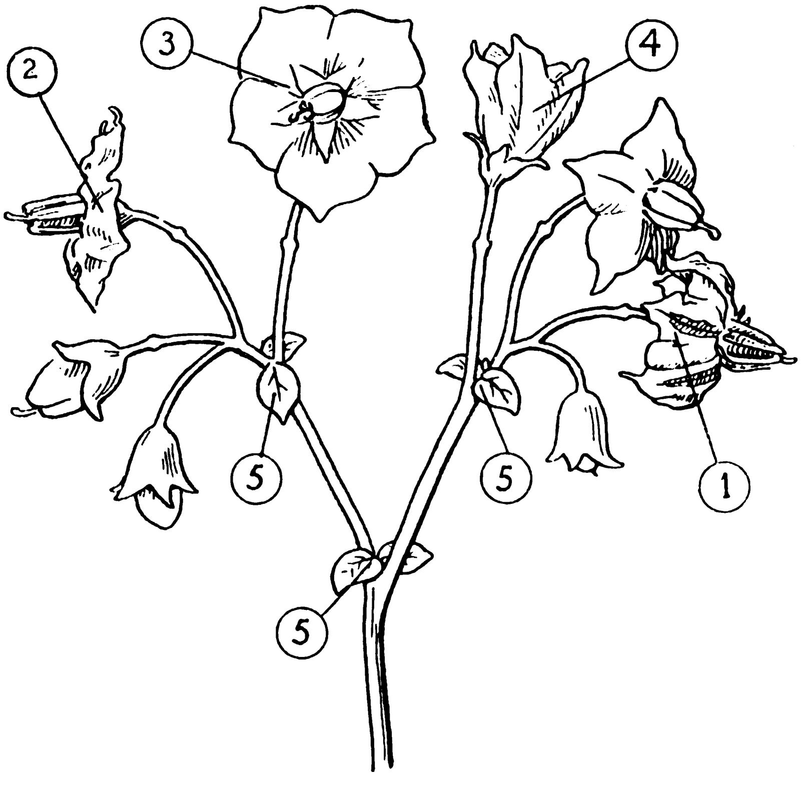

FIG. 46.—POTATO INFLORESCENCE.

1, Young flower, petals reflexed; 2, Mature flower, petals not reflexed; 3, Mature flower, front view: 4, Old flower, petals no longer open; 5, Leafy bracts.

(*c*) *Corolla* (*Petals*).—The corolla consists of five united petals and shows normally five tips. A departure from five has been observed in May Queen, Yam, Balmoral Castle, and some other varieties in which up to ten tips have been counted. Double corollas are characteristic of others, *e.g.*, Blackheart. The size of the flower may vary on an individual plant, but some varieties, such as British Queen, may be described as large-flowered, while others, such as Dean and Rhoderick Dhu, are small-flowered. The size of the flower varies from three-quarters-of-an-inch to two inches in diameter. The petals are not so completely united in some varieties as in others, with the result that the flower may assume, at times, a star-like appearance, *e.g.*, in The Massie; indeed, a variation of Up-to-Date shows the polypetalous condition. Fine hairs occur on the under surface of the petal tips and extend downwards along the ribs referred to below. In the centre of the flower and extending almost to the petal tips, are located five or more yellow-green rays or ribs consisting mainly of vascular bundles, and in some varieties this tissue becomes prominent by its purple colour. The colour of the flower is of value in identification, because it is almost constant for each variety. The petals may be self-coloured or parti-coloured.

Potato flowers are classified as white, greenish-white or purple. Purple, the predominating colour, might be regarded as being due to the presence of a red and blue cell sap, and, according to the proportions, the tint may be more blue or more red. Pure red and pure blue do not occur. The colouring may vary in shade and tone on the different parts of the same flower; the tissue adjacent to the vascular bundles in the centre of the flower is usually deeper coloured than the remainder and red frequently enters more into its composition. The outer part of the petals lying between the tips is also frequently deeply coloured. Generally, coloured flowers have white tips, but in some varieties, *e.g.*, Up-to-Date, this characteristic is absent. With age, the colour of the flower fades, but within a variety the changes are uniform; the red seems to fade more rapidly than the blue, with the result that slightly withered purple flowers may actually appear blue.

Varieties are sometimes coloured only on the lower sufaces of the petals, *e.g.*, Shamrock, Flourball, Dean and occasionally Majestic; and others again are characterised by the high development of pigment at the very base of the corolla tube, *e.g.*, Dean (A. Dean) and Rector. It is impossible to describe in words the various shades and tones which appear in a flower. The most convenient method of arriving at a satisfactory standard is by using a colour-chart. The comparison is made with the colour of the petals—but not the heart of the flower—when they are fully matured. A correlation appears to exist between the flower colours and those of the sprouts of the tuber. Varieties with pink sprouts show the colour as red-purple in the flower, or they may be white; blue sprouts are followed by blue or blue-purple flowers, or white. The white flowers may be regarded as albinos, with the colour element absent, and occur in both groups. On the other hand, there are some varieties *e.g.* Golden Wonder, which may be described as "border-line varieties," and in which the flower colour fluctuates between red-purple and blue-purple. While the flower colour is an extremely useful identification mark, it must not be regarded as infallible; variation in the colour of the Potato flower occurs occasionally. Thus, white flowers have been found in the following varieties:—Up-to-Date, Field-Marshal, President and Golden Wonder. Occasionally, an inflorescence is met in which white and coloured flowers exist together, *e.g.*, in Field-Marshal, and very rarely individual coloured flowers may have a white sector, *e.g.*, Golden Wonder. Again, General, a white-flowering variety, occasionally produces red-purple flowers.

(*d*) *The Androecium* (*Stamens*).—There are five stamens. Each anther lobe consists of two pollen sacs which open by means of a single pore situated at the apex. The stamens are normally arranged in a symmetrical column surrounding the pistil, but in most old flowers they assume a loose appearance. Some varieties however, such as Crusader, are characterised by loose but normal stamens in the younger flowers. Other varieties appear incapable of forming normal stamens, these generally remaining small, yellowish and twisted, *e.g.*, King Edward, Ally, Arran Chief. The normal colour of the anthers is orange-yellow. Yellow or greenish yellow anthers are found in some varieties, and in others at times a reddish tinge is exhibited, *e.g.*, Rector. Stamens sometimes become pistillate, forming a rudimentary ovary with ovules and stigmatic surface surmounting, but as yet no ripe seeds have been found or induced in these, *e.g.*, Champion and Celt. The colour of the anther is, in general, varietal, but exceptional plants occur commonly in many varieties in which a departure from the normal is found.

(*c*) *Gynoecium*.—The gynoecium is superior, consisting of two united carpels.

(1). The *Stigma* is usually bilobed, but not infrequently numerous lobes occur, as in May Queen. The stigma is green and at maturity a sticky fluid is exuded on its surface. Sometimes the stigmas are black, especially when they are immature, *e.g.*, Burnhead Rogue. The stigma is usually receptive before the anthers open.

(2). The *Style* is erect and light green coloured; in some varieties it may be twisted, *e.g.*, King Edward, while in at least one variety—Buchan Beauty—it has a characteristically purple-coloured ring at a point almost coincident with the apices of the stamens. Some varieties, *e.g.*, Bishop, Boor, Dargill Gem, Abundance and the Colourless Rogue, have long styles, these protruding for some distance beyond the tips of the anthers; others, including Up-to-Date, Sharpe's Victor and Buchan Beauty, have short styles; and others, again, have styles of moderate length, *e.g.*, Templar and Majestic.

(3). The *Ovary* includes two cavities, and the numerous ovules are arranged in what is known as axile placentation. Multilocular ovaries occur, but these are not characteristic of any variety. Where the tuber skin is coloured, the placenta (*i.e.*, the tissue on which the ovules arise) may also be coloured. Thus, Arran Victory and Edzell Blue have purple placentas, while those of Kerr's Pink and Farish's Pink Champion are red. On the other hand, the placentas of Yam, Pride of Bute and others are colourless. The shade of colour is also of use; Raeburn's Gregor Cups may be distinguished from Sharpe's Pink Seedling, which it closely resembles, by its more purple placenta.

(*f*) The *Fruit*. The Potato "Plum," "seed-ball" or "Apple," is a berry. The round form of the fruit is stated to differentiate Solanum tuberosum (*i.e.*, the common Potato) from some wild tuber-bearing species of the same genus, *e.g.*, S. Commersonii and S. demissum, whose plums are heart-shaped. At least one cultivated variety, the "Ham Red," of Orkney, exhibits the heart-shape form of berry; such plums have also been found on seedling varieties. The size of the fruit varies on an individual plant, but varieties may be grouped into those which produce large, and those which produce small fruit normally. The size, however, may depend on capacity for receiving pollen, *e.g.*, one can induce large berries on varieties which produce normally small-sized fruit by using profusion of pollen. Green is the usual colour of the plum, but different varieties exhibit different shades of green: some show black, red or brown markings on the skin, and some are purple, *e.g.*, Keppleston Kidney. Purple plums have so far only been found associated with blue sprouts. When the fruit has been stored for some time, generally a light buff colour is developed.

The placenta of the fruit—as of the flower—of some varieties is coloured, a characteristic which is of considerable importance for identification. As before, the colouring has only been observed in varieties the skin of whose tubers is coloured; the colour varies from almost a pure pink to a dark purple. Some varieties have the colouring only in the young fruit, *e.g.*, Shamrock and Flourball, and in others only the mature fruits are coloured. The placentas of Edzell Blue, Orkney Blue and Old Long Blue are deep purple; those of Lord Rosebery, Ranfurly Red, Cardinal and Prizetaker are pink or reddish purple; while some varieties with coloured tubers exhibit no colour, *e.g.*, Pride of Bute. If the calyx be removed from the fruit, normally, a buff or yellow-coloured ring can be seen at the point of attachment; in at least one commercial variety, Rector, this ring is red, and in others it is purple. Up to the present, the purple colouring has only been found on seedlings, but there is no resaon to assume that it will not at some future date appear on a commercial variety. Its occurrence appears to be associated with blue sprouts. As further varietal characters peculiar to the fruit the following deserve mention:—(1) The ease or otherwise with which the plums separate themselves from the mother plant; the fruit of Flourball, Majestic and some other varieties falls easily from the inflorescence stalks, while that of Leinster Wonder or of Keppleston Kidney clings with some tenacity to the parent; (2) the aroma; such fruit as Majestic is seldom, if ever, scented, while that of some varieties, *e.g.*, Myatt's Ashleaf, when fully mature, emits a pleasant odour; (3) some varieties at times form natural berries which are devoid of seed, *e.g.*, Arran Comrade. *T. P. McIntosh, B.Sc.*

(*To be continued.*)

COLOUR SCALES.

In a letter which appeared in *The Gardeners' Chronicle* of June 12 (p. 428) under the heading of "Color Charts," Lieut.-Col. P. P. Behrens draws attention to the work "*Color Standards and Color Nomenclature,*" published by Robert Ridgway in Washington, D.C., in 1912, and recommends the use of this scale to gardeners, botanists, and naturalists as a standard. Ridgway's work is certainly very careful and meritorious, and no doubt one of the best colour scales; but we have in Germany a scale, which also appeared in 1912, based on the same principles and employs almost the same designations of colours. This was published by Mr. P. Baumann, at Aue, in Saxony, and its arrangement of colours permits very easy comparison between scale-colour and sample by a slit introduced into the chart. Both systems, however, suffer from the disadvantage that although the combinations of single colours are effected on certain principles with white and black, the *results* of the mixtures, *i.e.*, the "composite" colours, cannot be exactly determined; the colours which should emerge according to the prescriptions are only producible if the mixer is possessed of a certain "colour sense," or feeling. It is as if, in order to divide a rod a yard in length into one hundred equal parts, one were to cut from it "by the eye" one hundred single short rods, of which each should be one-one-hundredth of a yard shorter than the preceding one. To measure anything with one of these short rods it would be necessary to find out by comparison which rod happens to be of the same length; and even then it would be uncertain whether the difference in length between the various short rods was on a uniform basis or not.

The employment of measure and number in the values of lengths and weights is in these days a matter of course. The introduction by Ostwald of units of measurement into the colour-world is something new, and as yet unknown to most colour-users. The methods by which colours can be measured are to be found in Vol. XXXV of the *Proceedings of the Sächsische Gesellschaft der Wissenschaften*, Leipzig (mathematical-physical class), 1917, and the first apparatus used for color-measurement, constructed by Ostwald, is likewise there described.

In the meantime, in 1921, the Institute for Colour Science was established at Dresden under the title, "Deutsche Werkstelle für Farbkunde." The methods of measurement have been materially improved. New apparatus of great perfection has been constructed by the world-famous firm of Carl Zeiss, Jena, and the Dresden Institute has published new circles of measurement. For ordinary requirements, the scheme of colours described on p. 316 May 1, 1926 of this journal, has been issued, and this is sufficient for many purposes—for instance, in gardening. There are, however, among flowers, many colours which cannot be reproduced exactly on paper. For such cases there are no other means at present than measuring them with the apparatus mentioned above, and determining their distinguishing numbers. It will probably be possible to reproduce the majority of these colours on silk or silk-velvet, and the Dresden Institute is now occupied with the production of such sample cards, which will, however, be rather expensive.

The determination of the most important colour-tones by measurement is a matter of international consequence, and the Dresden Institute hopes that its efforts will meet with interest and support in other countries. At all events, it would mean a retrogression if now, after the first step in quantitative colour-mensuration had been taken, we returned to the qualitative comparison, in which the colours are characterised only by names, especially as, by a merely visual presentation of colour examples it will never be possible to embrace the entire range. In gardening circles it must, therefore, be found serviceable to use the new system in which the colours are determined by their optical qualities. Ostwald's characterisations are particularly suitable for international use, as only letters and figures are employed. So soon as the system is universally adopted, an exact description of any colour, without examples or comparisons, can be sent by letter or cable to anywhere in the world.

The new apparatus for colour mensuration permits each colour to be exactly optically described according to its value and position in the scale. Everyone in possession of such an apparatus will, therefore, be able to gain an immediate and correct idea of the colour described in that manner. Industries in Germany—for example, the textile industry—are now contemplating the adoption of the new system, and the introduction of the new designations into their sample cards. Nowadays, it is only a matter of expense to measure a collection of colours, such as Ridgway's, and to include also other colours determined on the new system. A superficial examination of the Ridgway system by the Dresden Institute has shown that, for instance, the scale of the neutral greys is almost identical with the grey series on which Ostwald's figures are all based. In Ridgway's colour circles, consisting of seventy-two parts, several important shades are missed entirely; to a careful observer it cannot escape notice that the transitions of the colours between thirty-seven and forty-five are more rapid than in other colours, and that certain important green shades are not to be found at all. Also between sixty-seven and one, in the red and violet section, some shades should be added in order to obtain a real uniformity in the Ridgway scale. In Ostwald's system the shadings after white and black of the single tones are better and more evenly carried out; but it would take too long to go into full details. It can only be repeated that the adoption of the Ridgway system would not be a forward step, but a retrogression in colour science. Now that measurement and number have been introduced into the colour-world it seems impossible to think of sacrificing this great advantage. *F. A. O. Krüger, Professor, Director of the Institute of Color-Science, Dresden.*

NURSERY NOTES.

MESSRS. JAMES CYPHER AND SONS.

There is no doubt that Cheltenham has derived a great deal of its fame as a "garden town" from the fact that Mr. James Cypher established a nursery there. Mr. James Cypher was a splendid plantsman and a most successful exhibitor in the days when specimen stove and greenhouse plants were the chief features of most horticultural exhibitions. His great success carried the fame of Cheltenham throughout the country and induced many people to visit the town where the wide, tree-planted streets and gardens provided other irresistible attractions.

What Mr. James Cypher did for Cheltenham in by-gone days his sons have continued in later times, but on different lines. Messrs. J. Cypher and Sons, with Mr. John Cypher at their head, are recognised everywhere as the premier exhibitors of artistic groups of flowering and foliage plants, groups of non-flowering plants, and of specimen plants. They are rarely beaten, and the firm or person able to place the Cheltenham firm in a secondary position at the great provincial shows is sure to obtain the heartiest of congratulations, and further, the sincerest congratulations will come promptly from Mr. John Cypher, who is as fine a sportsman as he is an exhibitor.

The nurseries of the firm are but a few minutes walk from the centre of the town, and a large portion of the area is occupied by greenhouses. Orchids are grown extensively, and among Orchids the winter-flowering Cypripediums are particularly well-represented and largely grown. Of these useful plants we need write no more now than that they are in the very best of health and promise to provide a grand display in December, when we hope to see them again. Fine varieties of Laelia purpurata are cultivated to a greater extent than was anticipated, as American fanciers are always on the look-out for fine plants of the best forms. Laelio-Cattleyas of the Canhamiana type are a well-represented section, as also are the showy Brasso-Cattleyas and hybrid Cattleyas.

It was a great pleasure on the occasion of a recent visit to see goodly batches of healthy plants of Odontoglossum citrosmum, O. grande and its varieties, Masdevallias of many kinds, notably those of the Chimaera section; hybrids and species of Epidendrum, Restrepias, Bulbophyllums, Vandas, Sobralias and many other Orchids of great interest and much beauty, but which are not found so often in modern amateurs' collections as they were in the collections of many former enthusiasts.

Although they cultivate the above and many other kinds of uncommon Orchids, Messrs. J. Cypher and Sons are fully alive to the tendencies of modern amateur growers, and so they grow large numbers of the showier hybrid Odontoglossums and the summer-flowering hybrid Cypripediums, the latter including many choice albinos and hybrids of C. bellatulum and C. niveum.

Codiaeums and Dracaenas are a fine feature and all the best varieties are grown and represented by both large and small plants. There appears to be a steady business in these handsome foliage plants, and besides, they are very useful for inclusion in the firm's large competitive exhibits. Nandina domestica, greatly prized for its fine colouring; the bright-hued Selaginella, popularly known as S. caesia; Francoa ramosa, Fuchsia triphylla, Phyllanthus nivosus, Paullinia thalictrifolia, Aralias in variety, Tydeas, Gesneras, Achimenes, greenhouse Statices, Clerodendron fallax and C. Thomsonae.

Torenias and Cape Pelargoniums are a few of the many kinds of plants grown at Cheltenham. In short, Messrs. J. Cypher and Sons have a larger selection of indoor plants than we have seen in any one nursery establishment for a very long time. A plant enthusiast will find abundant interest in the collections, and the interest will be doubled if the visitor is fortunate in having Mr. John Cypher as guide through them.

VEGETABLE GARDEN.

CLEARING OFF EXHAUSTED CROPS.

When early Spinach has run to seed and the usefulness of the crop for culinary purposes is finished, it should not be left standing to exhaust the soil but should be cleared away or, better still, dug in where it has been growing as green manure.

Shallots are also now maturing and should be lifted and spread out in a dry, sunny place to complete the process of ripening and drying, by which means alone it is possible to keep them sound and fit for use during winter and spring.

Ground cleared of these early crops may be used for sowing many kinds of early-maturing salads and also for what may be considered the principal sowing of Cabbages for next season.

In northern gardens the first sowing of Cabbages should be made about July 15, choosing a site that is fully exposed and not overhung or shaded by trees; as stated above, ground that has already carried an early crop, if dug over, and made firm, will be in good condition for forming a seed-bed for this crop. Rows should be drawn a foot apart and the seed sown very thinly to produce strong, sturdy plants, as it is false economy to crowd seedlings of any kind, but more so this sowing of Cabbages, which have to withstand the coming winter, and stout, hardy plants have an advantage, which they never lose, over weakly ones. *J. T. H.*

SPINACH BEET

The perpetual Spinach is a valuable plant for producing a continuous supply of leaves which make an excellent substitute for ordinary Spinach. It is of great value for early spring supplies and again when ordinary Spinach is past its prime, for even on the driest soils it continues to yield a plentiful supply of leaves provided they are kept gathered to promote continuous growth.

As the object in cultivating is to produce the largest supply possible of tender leaves, the seeds should be sown in soil that has recently been manured or that is not in an impoverished state. The seeds should be sown in drills not less than eighteen inches apart and the plants well-thinned in the rows, as the yield will be much larger from a given space from plants that have sufficient room for their full development than from those that are crowded.

Being a plant of hardy constitution there is no danger of the crop being destroyed by frost, grubs or other causes which frequently spoil the crop of winter Spinach. *A. P. C.*

FRUIT GARDEN.

GRAFTING THE APPLE ON THE WILLOW.

I recently witnessed an interesting and, to me, rather remarkable instance of successful grafting. Two Apple scions were worked on to the Sallow (Salix Caprea) last March and they bear every evidence of perfect union. In both instances the buds on the scion have developed leaves, in fact, they look just as one would expect if the stock were Paradise or Crab Apple and not Sallow. The phenomenon occurs in a group of allotments at Tonyrefail, Glamorgan, and the plot-holder who worked the scions is a man with an experimental turn of mind. The Sallows occur in a hedgerow of the field and the specimen used as a stock is some eight to ten years old. I hope to observe the behaviour of the scions from now onwards and will record the fact if growth should collapse. I have seen the Apple grafted on the Whitebeam and the common Hawthorn, but never on the Sallow. *Geo. H. Copley., N.D.H.*

CULTURAL METHODS AND LOCAL CONDITIONS.

I recently paid a visit to a fruit farm in Hampshire, about eighty miles from my place. What interested me most was the very different character of growth and behaviour of Apples on the two farms although both are on the same soil formation, the Upper Greensand. Taking Cox's Orange Pippin as an example, with me this variety makes long, slender growth, whilst, on the Hampshire farm, the shoots are much sturdier and shorter. All varieties of Apples there can be closely spur-pruned without prejudice to fruiting, even such kinds as Irish Peach, Mr. Gladstone and Worcester Pearmain, which bear largely on the tips of the laterals, and also strong-growing varieties like Bramley's Seedling, which in most places would be very long-delayed in bearing if so severely treated.

Such a system of pruning the same varieties on my place would delay fruiting almost indefinitely, as I know from trial. A much more extended style of pruning is necessary in my conditions.

From the above remarks it follows that succeed the cordon system of culture should on the Hampshire farm. This is indeed the case, for I was shown single cordon trees of many varieties carrying the best crop of Apples that I have seen this season. Such a contrast shows how much local conditions influence methods of fruit culture, and how risky it is to follow blindly the methods of other growers without first trying them on a small scale. *Market Grower.*

FRUIT REGISTER.

APPLE WHITE TRANSPARENT.

I class this Apple amongst the very best early varieties; a first-rate culinary sort, it is also highly palatable as dessert, and is in season during July and August. It makes an excellent bush tree and will succeed in the poorest of soils. The tree crops when in a young state.

The growth of the tree is vigorous, and the variety is a consistent and heavy cropper, the fruits being invariably clean. The fruit is conical, creamy-white, almost pure white when ripe; the flesh is soft, white and juicy when eaten from the tree, and is a most refreshing summer fruit. This Apple was introduced from Russia early in the nineteenth century, and it is known as Yellow Transparent in America. *Ralph E. Arnold.*

HOME CORRESPONDENCE.

Escallonia C. F. Ball.—In a recent issue of *The Gardeners' Chronicle* I noticed in your report of the Royal Horticultural Society's meeting some remarks on Escallonia hybrid C. F. Ball. This, we consider, is the finest-coloured of all the hybrids and a very vigorous, free-flowering shrub. From the remarks concerning the specimens exhibited at Westminster it does not seem to me that they could be the same as the plant originally named. I have sent to-day, per parcels post, specimens of several hybrids raised by the late Mr. Ball, one of which we have named "Alice" after his wife. E. C. F. Ball was raised from a cross between E. macrantha and E. rubra; of the parentage of the others I am not certain, but during the years immediately prior to his joining the army, Mr. Ball made the following crosses:—E. pterocladon × macrantha, and E. exoniensis × E. macrantha *J. W. Besant, Glasnevin Botanic Gardens.*

SOCIETIES.

GUILDFORD AND DISTRICT GARDENERS'.

The fourth annual exhibition of the Guildford and District Gardeners' Association, held at Stoke Park on July 14, was a great success and showed a marked improvement over its predecessors. The bulk of the exhibits were accommodated in a very large marquee, while a large tent, close by, was filled with table decorations and the children's exhibits. These last were very interesting; as duly announced in these pages, the school children of Guildford were each presented with a Viola plant, and told how to care for it under pot culture, and invited to bring the result to the show. No fewer than 523 scholars sent their specimens, and some had achieved great success. Wild flowers were also shown extensively by children, but we should like to see collections of these flowers set out in small vases, each kind labelled with its popular and botanical names. The Guildford district offers unusual opportunities for an educational feature of this kind. Additional attractions were the tents devoted to domestic and industrial classes, honey, rabbits and poultry.

The Guildford Society is making great progress and a very fine feeling animates its 804 members, who derive inspiration from the enthusiasm of the president, Alderman W. T. Patrick, Mr. Sawyer, Mr. Tylecote, Mr. Harvey and Mr. Kinggett, the sectional secretaries, and Mr. Stedman, the editor of the Society's monthly publication. There were 1,100 entries on this occasion, in addition to those from children and in the industrial and small stock classes.

In the open section there was a capital entry of cut Carnations of the perpetual-flowering type, and here the chief award and Silver Cup were won by Sir J. Leigh (gr. Mr. J. McCullough), who showed fine examples of White Pearl, Winter Glow, Triumph, Enchantress Supreme, Lord Lambourne and Lady Inverforth; second, Mrs. Hamilton Fellows (gr. Mr. C. Hebbourn); third, Capt. S. Byfield (gr. Mr. J. Curzon). Fourteen competed for the Silver Cup, Silver N.S.P.S. Medal and first prize offered for the best collection of nine varieties of Sweet Peas, twelve spikes of each. The successful exhibitor was F. W. Franks, Esq. (gr. Mr. W. Humphrey), who showed capital blooms of Peggy, Royalty, Majestic, Golden Glow, Constance Hinton, Youth, Hebe and Powerscourt; second, Mrs. Farnham (gr. Mr. J. Bennington); third, Mrs. Hamilton Fellows.

Equally attractive was the class for a dozen kinds of herbaceous flowers, in which there were six entries. First prize was won by Mrs. Hamilton Fellows with white Phloxes, Galega Hartlandii, Eryngium Oliverianum, Heliopsis zinnaeflora, Alstroemerias, Campanulas, Heleniums and Monarda didyma; second, Col. J. Younger (gr. Mr. Souter); third, Sir William Lawrence (gr. Mr. Everatt), whose set included fine spikes of Lilium Hansonii Mrs. Hamilton Fellows led for six kinds of hardy fruits, and was equally successful for four kinds of fruit, the latter consisting of Black Hamburgh Grapes, a Melon, Hale's Early Peaches and Sir Joseph Paxton Strawberries.

Earl Beatty (gr. Mr. A. Barratt) beat Lord Riddell (gr. Mr. A. Payne) in the class for a collection of six kinds of vegetables, each showing excellent produce. Mr. J. S. Russell led for a table decoration, using Alstroemerias; second, Mrs. S. Bullen; third, Mrs. Hadyn Hunt. The competition in this class was very keen

Capt. Byfield won the Silver Cup and first prize for a collection of Roses, and was followed in order of mention by Col. Younger and Miss Howarth.

In the members' classes, Mr. Neill Gossage led for Begonias, for herbaceous flowers and for annuals. Mrs. Hamilton Fellows had the best Delphiniums; Mr. F. Smallpiece the best Phloxes; Earl Beatty the best Dahlias and the best vegetables; and Mr. Colin King the best collection of fruits.

In other divisions some of the leading exhibitors were Mr. E Malyon, Mrs. Ward, Mrs. **SHALLESS**, Mrs. **HAMMOND**, Mr. **TYLECOTE**, Mr. **LEMON**, Mr. **C. HOLT**, Mr. **C. H. PAGE**, Mr. **GOSSAGE** and Mr. **MARSHALL**.

Numerous trade displays were arranged down the centre of the large tent, and the awards were made as follow :—

Gold Medal.—To Messrs. **S. BIDE AND SONS**, for Sweet Peas ; and to Mr. **H. STREET**, for Roses.

Silver Medal.—To Messrs. **JACKMAN AND SON**, for hardy flowers and Roses ; to Mr. **FOGWILL** for Gladioli and hardy flowers ; to Messrs. **SPOONER AND SONS**, for hardy flowers and Roses ; to Messrs. **B. CANT AND SONS**, for Roses ; to Messrs. **LANGRIDGE**, fcr Gladioli and Sweet Peas ; to the **CHALK HILL NURSERIES**, for border flowers ; to Mr. **H. HEMSLEY**, for alpine plants ; and to Messrs. **J. PEED AND SON**, for stove and greenhouse plants.

SCOTTISH NATIONAL SWEET PEA, ROSE AND CARNATION.

THE second series of trials of new Sweet Peas not in commerce, conducted by the above Society at Helensburgh, were open to the inspection of the members on the 10th inst., when a large number of visitors from different parts of the country took advantage of the opportunity of inspecting the latest novelties.

Compared with last year, there was a substantial increase in the number of varieties sent by the leading raisers in England, Scotland, Ireland, Canada and the United States, and the plants comprised seventy-four entries, which were raised from seeds sown in autumn, and were arranged in rows according to colour classification. Grown on the single stem principle the seedlings bore evidence of strong, healthy growth, and, favoured with a spell of genial weather earlier in the week, the plants were in the height of bloom and made a grand display of colour.

The trials were most interesting, and reflected several features of which the most outstanding was the predominence of the cerise class. Hitherto the absence of a vase of that colour at the shows in Scotland has been the subject of comment among exhibitors, and the introduction of different shades of a quality that will probably ensure the inclusion of one or more varieties in the honours' list is evidence of the enterprise of the firms which specialise in this popular annual. The cream-pink Sweet Peas in commerce have set a high standard of excellence that makes it difficult for newcomers to excel, and possibly on that account the seedlings in that class were regarded with disappointment. So far as colour is concerned, not one of them was better than the named varieties, and many were not so good, but their chief fault lay in the form of the flowers, which was characterised by an almost universal folding back of the standard at the side or a curling backwards at the top.

The blue class, of which there were examples of pale, deep and china shades, was strong, and one or two good sorts were discovered among the white, cream and scarlet classes. Varieties of lavender shades were not distinctive, one being after the type and colour of Mermaid and Wistaria, and the other, which resembled Austin Frederick, was unfixed. There was a purple variety which for beauty and richness of colour and size and form of the blooms will probably supersede the older sorts. It produces four and five blooms well-placed on long, strong stems.

Two new colours in Sweet Peas, viz., Blood Red and Crushed Strawberry did not find favour, and the presence of a novelty in the form of a seedling described as Grey Rose occasioned considerable comment. First impressions were not favourable, but the unique combination of grey and dark red improves with closer acquaintance, and several ladies were enthusiastic regarding its shot-silk-like appearance, closely approximating to a colour that is popular in present-day millinery and dresses. It may never enjoy wide popularity, but although it may be considered dull for table decoration, it will probably become a favourite variety with ladies.

One or two of the varieties were badly mixed, and others were handicapped by the presence of a single rogue, while an unusual thing happened to a Coral Pink seedling, the plants of which went completely blind.

The best of the new Peas will be exhibited at the approaching show on August 4, when the awards of the judges will be announced.

ROYAL GARDENERS' ORPHAN FUND.

THE annual festival dinner of the Royal Gardeners' Orphan Fund was held on Wednesday, July 14, in the Edward VII Rooms, Hotel Victoria, Northumberland Avenue, London. Mr. G. J. Nicholls, C.C., F.R.C.I., whose portrait we have pleasure in reproducing on page 62, occupied the chair, and he was supported by many prominent horticulturists, including Mr. Leonard Sutton, Mr. E. Sherwood, Lt.-Col. F. R. Durham, Mr. and Mrs. D. Ingamells, Mr. and Mrs. G. H. Barr, Mr. G. Ingram, Mr. W. L. Corry, Mr. and Mrs. H. J. Jones, Mr. and Mrs. J. F. McLeod, Mr. and Mrs. C. H. Curtis, Mr. and Mrs. J. M. Bridgeford, Mr. J. Cole, Mr. W. Cutbush, Mr. Dawkins, Mr. and Mrs. G. F. Tinley, Mr. and Mrs. D. Campbell, Mr. and Mrs. R. Findlay, Mr. A. Metcalfe, Mr. A. C. Bartlett, Mr. J. Willis, Mr. and Mrs. J. Collingridge, Mr. and Mrs. Robins, Mr. F. Reader, Mr. and Mrs. J. E. Dixon, Mr. H. R. Nutting, Mr. and Mrs. A. Harris, Mr. A. Dimmock and Mr. and Mrs. R. A. Witty.

The beautiful banqueting room was decorated by Mr. H. Miles with flowers and plants in a most delightful manner, and in the intervals between the speeches a musical programme was given under the direction of Mr. Ralph Norris.

The principal toast of the evening, that of the Royal Gardeners' Orphan Fund was proposed by the chairman. In appealing to those present to give generous support to the Fund, he reminded them of the long hours of gardeners and the nature of their work, which exposed them to all kinds of weather. He stated that the gardeners' remuneration was in most cases a very meagre one, and misfortune in ill-health or even death was likely to occur before he had an opportunity of saving sufficient money to provide for those who were depending upon him. We must remember, said Mr. Nicholls, that the delights of our gardens are provided by gardeners, and it is our duty to support a fund that gives assistance to the orphans of gardeners. In passing, he paid tribute to the committee and the secretary in having organised such a successful dinner, and said that many had no idea of the amount of work such a dinner entailed. He was glad to know that the hon. treasurer, Mr. E. Sherwood, had followed his father in that office, and he hoped that he would be able to do good work for the Fund for very many years to come. He stated that if he could help the Fund in any way in the future he would always be very glad to do so.

Mr. Sherwood, who responded, stated that the chairman had set a good example in making a brief speech on such a hot night, an example which he proposed to follow. It was his pleasure and duty to thank him on behalf of the Fund for being present in the chair. Mr. Sherwood then proceeded to read letters from mothers of orphans expressing their gratitude for assistance received, and he said his hearers would realise better from these letters the good work the Fund is doing than from anything he could say. He made a special appeal for funds to replace the investments which had to be sold during the war years. Mr. Sherwood next read a list of the gardening societies which have especially helped the Fund, and he recommended those who have beautiful gardens or who concern themselves with flower shows to take the opportunity of throwing open their gardens or appealing for funds at exhibitions on behalf of the Royal Gardeners' Orphan Fund. Mr. Sherwood said although the benefit allotted the orphans was only a mere pittance, the letters he had read clearly showed that it was a great help to the mothers.

The next toast, that of The Visitors, was proposed by Mr. Leonard Sutton. He said that were it not for the visitors the Fund could not be kept going. The weekly wage of a gardener allows him to make little provision for the future, and the various letters that had been read showed that not only were gardeners' orphans assisted by the weekly allowances, but many were given a good start in life owing to the special grants that the Committee are empowered to make on the children leaving school. He recommended all to give their support to the Fund, and he was assured that it could be under no better management than Mr. Sherwood and the committee.

Lt.-Col. Durham, in responding to the toast of the Visitors, stated that his attendance at the dinner was one of his first duties since he had been appointed to the secretaryship of the Royal Horticultural Society, and he could not say how glad he was to be present. He stated that his garden was his best love and he believed that the love of horticulture and of flowers was the one thing that kept the world happy. We, as a nation, love our flowers and our gardens and he would endeavour to do everything he could for horticulture, as he knew of its great humanising effect. He had been concerned with the War Graves Commission, and he was glad to know that everywhere the poor dead lie there is a garden, showing the affection of this country towards those who lie there.

At this stage of the proceedings, the secretary, Mr. A. C. Bartlett, announced that a sum of £1,083 15s. 0d. had been collected at and in consequence of the dinner, including the chairman's gift of 130 shares in Messrs. George Bowles, Nicholls and Co., to form a "George J. Nicholls' Fund" to provide for one orphan in perpetuity ; Mr. J. M. Bridgeford, £60, including five guineas each from Messrs. Watkins and Simpson, Mr. Alfred Watkins, Mr. J. M. Bridgeford, Mr. A. H. Howard, Mr. A. Bodger (California), and £5 from Messrs. T. Cullen and Sons. Mr. Edward Sherwood, fifty guineas ; Mr. Leonard Sutton (Trustee), £50 ; Messrs. Rothschild and Sons, twenty-five guineas ; R.H.S. Council, twenty guineas ; Mr. G. F. Tinley, £25 10s. 0d., including five guineas from the proprietors of *The Gardeners' Chronicle*, £7 12s. 6d. from *The Gardeners' Chronicle* Collecting Box, £5 from Mr. J. C. Allgrove, and £5 from Mr. W. L. Bradbury ; from Mr. J. E. Dixon and friends, twenty guineas ; Mr. H. J. Jones and friends, £20 ; Mr. J. F. McLeod and friends, £15 ; Messrs. Corry and Co., twelve guineas ; Mr. A. Rayner, twelve guineas ; Mr. H. R. Nutting, eleven guineas ; Major Geo. Churcher, ten guineas ; Messrs. Barr and Sons, ten guineas ; Messrs. Stewart and Co., seven guineas. The following each contributed five guineas : Mr. George Monro, Major E. J. Monro, Mr. W. H. Thomson (Clovenfords), Mr. A. Dawkins, Messrs. Waterer, Sons and Crisp, Mr. Edward Manwaring, Mr. Charles Heidsieck, Messrs. Thos. Darrington and Partner, Mr. W. T. Paulin, Messrs. Wm. Cutbush and Son, and the Horticultural Trades Association. The following each contributed £5 : Lord Leverhulme, Sir Otto Beit, Mr. Edwin Tate, and Mr. Graeme Whitelaw.

Mr. David Ingamell's list from supporters in Covent Garden Market amounted to £230 15s. 0d., including ten guineas each from Mr. D. Ingamells, Mr. H. Miles, Mr. J. L. Kinnell, Mr. J. Cull, Mr. A. Harris, and Mr. M. Larsen ; eight guineas from Mr. W. H. Robins, seven guineas from Mr. R. T. Bates and six guineas from Mr. Duncan Tucker ; five guineas each from Mr. A. Dimmock, Mr. J. Collingridge, Messrs. W. T. Ware, Ltd., Mr. H. F. Hannibal, Mr. J. Kirk, Mr. J. Linford, Mr. R. A. Witty, Mr. A. H. Stevens, Mr. G. Prickett and Son, Mr. W. Maxwell, Mr. F. Ladds, Mr. H. Jolis, Mr. Walter Stevens, Mr. Alfred Ward, Mr. G. T. Woodstock, Mr. F. Ridley, Mr. J. MacDonald and Mr. T. J. Poupart ; and £5 from Messrs. Lowe and Shawyer.

The proceedings concluded with the health of the chairman, proposed by Mr. James Douglas, who, after complimenting Mr. Nicholls for the efficient manner in which he had occupied the chair, facetiously remarked that God's two greatest gifts were gardens and the power of not saying too much !

KENT COUNTY AND SOFT FRUIT SHOW.

The Kent County Show was held at Margate on the 16th, 17th and 18th inst. in a large marquee, and was visited by a very large number of visitors, who took the keenest interest in the various exhibits. No effort had been spared to make the show a success, and the quality of the exhibits in the competitive and trade classes was all that could be desired.

The classes for collections of cut hardy herbaceous flowers, Sweet Peas, Roses, Carnations, bouquets, etc., were keenly contested. Gold Medals were awarded to Messrs. Allwood Bros. for non-competitive exhibits of Carnations and Dianthus Allwoodii; to Messrs. Stuart Low and Co., for Orchids and Carnations; to Barton Court Gardens, for Sweet Peas; and to Messrs. G. Bunyard and Co. A Gold and Silver Medal were awarded to Mr. W. Wells, junr., Merstham, for herbaceous flowers and Roses; and a Gold and Silver Medal to Messrs. G. and A. Clark, Ltd., Dover.

A most interesting exhibition of Cherries and soft fruits was organised by the Kent Branch of the National Farmers' Union on the second day of the show, when no fewer than fifteen Challenge Cups were offered for competition in the various classes. A much larger number of exhibits was placed before the judges than was expected. Liberal prizes were offered by salesmen in Covent Garden Market, Maidstone and Manchester. As many as thirty-four exhibits were staged in some of the Cherry classes, and there were several in the class for a collection of eight varieties. Red, yellow green and white Gooseberries, Red Currants, Black Currants, Raspberries and Tomatos were also shown well. It would be difficult to find hardy fruits of equal quality at any other show in the country.

HANLEY PARK SHOW.

The twenty-eighth horticultural show at Hanley was held in the beautiful Hanley Park on July 7, 8 and 9, and from a horticultural point of view was the most successful held over a long series of years. Unfortunately, the industrial depression and the unkindness of the weather had a depressing effect upon the attendance and will, we fear, result in a serious loss to the promoters.

Exhibits in the open classes were substantially larger than last year and the quality much improved, which resulted in the competition being much keener than usual. The special features were the miscellaneous groups of flowering and foliage plants, collections of cut Roses and Sweet Peas, and the table decorations. Other good features of this show were the allotment societies' entries and the children's section, open to all the schools in the city, which attracted no fewer than 1,700 competitors.

The chief prize winners in the open class for a group of flowering and foliage plants were, Messrs. J. Cypher and Sons and Mr. W. A. Holmes, Chesterfield, who occupied the same relative positions for a group of ornamental foliage plants, for six plants in flower and for a dozen table plants. For a group of aquatic plants, the first and a special prize were won by Messrs. Caldwell and Sons, Knutsford; second, Messrs. Hodsons, Ltd., Nottingham. The first prize and Silver Cup offered for a collection of cut Roses were won by Messrs. C. Gregory, Nottingham; second Messrs. W. Lowe and Sons, Beeston. Mr. H. Drew, Longworth, led for thirty-six Roses; second, Messrs. C. Gregory. For twenty-four Roses, the same competitors occupied similar positions, but for twenty-four Hybrid Tea Roses the positions were reversed. Mr. Drew showed the best five baskets of cut Roses; second, Messrs. Wheatcroft Bros.; third, Messrs. C. Gregory. Messrs. Gregory, Drew and Wheatcroft Bros. were the chief prize winners in other smaller classes for Roses.

The classes allocated to gardeners and amateurs, for which liberal prizes were offered, were well filled.

Trade groups were well represented, and besides a Large Gold Medal, the Silver Cup presented by Mr. Jesse Shirley for the best exhibit in the show, was well won by Messrs. James Carter and Co., London, with a very fine collection of vegetables. Gold Medals were awarded to Messrs. E. Webb and Sons; Messrs. Hewitt, Messrs. Leightons and Messrs. Hodsons; and Silver Medals to Mr. J. Bourtons, Messrs. Bakers, Messrs. Waterhouse, Messrs. Cauldwell and Sons, and Messrs. Shepperds.

Obituary.

George H. Beckett.—We regret to learn of the death of Mr. G. H. Beckett, in a nursing home at Mansfield, on July 17. Mr. Beckett was gardener to Col. H. B. L. Hughes, Kinmel Park, Denbighshire, and had charge of those gardens for thirty-six years. He served his apprenticeship at Ossulton Park, Notts., and, later, served under Mr. Speed, at Penrhyn Castle Gardens, and under the late Mr. Harrison, at Knowsley, Prescot, before going to Kinmel. He was a very skilful gardener and highly esteemed throughout the counties of Denbigh and Flint. His wife predeceased him by only seven weeks; he leaves a son and two daughters.

M. Raoul Beaucantin.—We have learnt with much regret of the death of the well-known French landscape gardener, M. Raoul Beaucantin, who died suddenly at the age of sixty while travelling in the express from Paris to Brest. M. Beaucantin, who belonged to a family of gardeners, was well known in French horticultural circles, and his death will be much regretted.

Sir John Ross.—The death of Sir John Ross, of Bladensburg, which occurred on July 12, when he was seventy-seven years of age, ends the interesting career of an interesting personality, and adds yet another name to the long roll of men who, after a strenuous life in the service of King and country, have found that the cultivation of a garden brings such measure of refreshment to the mind as is not to be extracted from other homely pursuits. Though keenly alive to the beauties of Nature, of which he had seen a good deal in his many visits to the continent, and especially during the time he was attached to the Turkish Boundary Commission in the eighties, Sir John Ross, like so many others before him, did not begin the serious cultivation of plants till he had reached middle age, but after the death of his mother, he plunged into the pursuit of what soon became his main interest in life with a zest which held him to the last. When his official career came to an end he devoted himself wholeheartedly to his hobby, and in pursuit of it ransacked the nurseries of repute in Britain and on the continent. Though catholic in his tastes, Sir John was discriminating; he liked to try everything for himself, and he had excellent reason, for Rostrevor is something of a forcing house in which plants, shrubs and trees sometimes grow almost out of recognition. Sir John was wise enough to make the most of the extraordinary natural advantages of the place, with the result that, in the words of one who is probably better able than most to judge, "his collection of hardy, half-hardy and tender shrubs and trees, and, to a lesser extent, of herbaceous plants, was certainly the best in Ireland." Sixteen years ago, Sir John published a catalogue of the plants growing at Rostrevor, and this included members of no fewer than 670 species. Since then it has received many additions. The situation of Rostrevor is ideal for vegetation, for between it and the sea there is a hill some three hundred feet high, which entirely protects it from sea winds, and on its southern slope, in light, shaly soil, moist in places where natural springs break out, and entirely innocent of lime, gives foothold to many plants which are killed or crippled elsewhere. In such a place, and though the average rainfall is not excessive, the climate has that degree of softness which, if too relaxing for many human beings, suits plant life in general once it has grown out of the cradle. Winters are seldom severe, and northerly and easterly winds find no entrance. The view from the hill, as the ascent is gradually made, is remarkable, even in a land of fine scenery, for the eye takes in the Mourne Mountains, Carlingford Lough, and away in the blue, the hills of Louth and Down. To those who know their plants, the ascent is the more enjoyable because of the rare and interesting things which catch the eye at every turn, the name and history of each graven on what must surely have been the most retentive memory possessed by a gardener. Indeed so good was his memory that Sir John knew the serial numbers of all the many Wilson and Forrest Rhododendrons at Rostrevor by heart! To a kindly, courteous and inspiring personality he brought an exhilarating enthusiasm and a full measure of that generosity which seems inseparable from the cult of a garden. Irish to the backbone, Sir John Ross was a kindly and delightful host and a correspondent whose every letter it was a joy to read. Sir John Ross was created K.C.B. in 1903, two years after he had been appointed Chief Commissioner of the Dublin Metropolitan Police, and K.C.V.O. in 1911. The distinction "of Bladensburg" was derived from his grandfather, Major-General Robert Ross, who, in 1814, commanded an expeditionary force of 4,500 men against the United States. On August 24, 1814, he routed a superior force of American troops at Bladensburg, and marching on to Washington, took the city by surprise, destroyed the public buildings and returned unmolested to his ships. A month later Ross was killed in an attack on Baltimore, and to commemorate his loyalty, ability and valour, his widow and descendants were granted the suffix "of Bladensburg," with an addition to his coat of arms of a right hand holding a broken flagstaff, to which was attached the flag of the United States of America.

Frederick J. Vert.—A wide circle of friends in the horticultural world will learn with regret of the death of Mr. Frederick John Vert, of Saffron Walden, which occurred on Tuesday, at the age of 45. Mr. Vert was taken ill on Thursday of last week, and a specialist who was called in advised his removal to the Evelyn Nursing Home, Cambridge, where he underwent an operation on the following day. Mr. Vert was the second son of Mr. James Vert, gardener to Lord Howard de Walden, at Chirk Castle, and was a partner in, and manager of, the firm of Messrs. James Vert and Sons, nurserymen, of Saffron Walden. He acted as judge at many local flower shows in the eastern counties. His firm exhibited successfully at the Shrewsbury and other shows and are noted for Hollyhocks, in which they specialise. Mr. F. J. Vert was active in resuscitating the Saffron Walden Horticultural Society's flower show three years ago, after a lapse of twenty years. He leaves a widow and three young children. The funeral takes place to-day, Saturday, at Saffron Walden, at 2.30 p.m.

M. Albert Viger.—We greatly regret to announce the death on July 8, of M. Albert Viger, for thirty years president, and subsequently honorary president, of the French National Horticultural Society. M. Viger was found dead in his bed at his home, Châteauneuf-sur-Loire, Loiret. Our readers may recall that M. Viger only retired from his presidency of the Society in February of last year (see *Gard. Chron.*, February 13, 1926, p. 110); he was a well-known figure in French agricultural and horticultural circles, and had been no fewer than seven times Minister of Agriculture; he was also a member of the Academy of Agriculture and a Commander of the Legion of Honour. His loss will be greatly felt by his friends and colleagues.

TRADE NOTE.

Messrs. Edward Webb and Sons, Ltd., Stourbridge, have been awarded Gold Medals for exhibits of flowers and vegetables at the Royal Show (Horticultural Section), Reading, Hanley Floral Fête, and Wolverhampton Flower Show, respectively.

ANSWERS TO CORRESPONDENTS.

Carnations Diseased.—*G. G. H.* The Carnation leaves are attacked by a fungus, Fusarium sp. There was also some rust and a good deal of red spider mite. The Fusarium is causing most of the damage, and infection by this fungus is due to unsuitable conditions. The absence of top ventilation in your house is not conducive to efficient ventilation and circulation of the air, which is probably too damp at some period of the day or night. Control of this disease depends upon efficient ventilation.

Elms and Cherries Diseased.—(1) The Elm leaves are damaged by case-bearers, the larvae of a small moth. There are dozens of them in the parcel. (2) The form of brown rot known as wither-tip, a fungus disease. Cut off and burn all dead wood now. (3) Also brown rot, which is very prevalent on Cherries this year. Treat as recommended above.

Erica ventricosa.—*C. K.* The specimen is Erica ventricosa, one of the South African Heaths. This species grows very slowly and does not require much, if any, pruning. The Heaths are evergreen, and must not be allowed to become dry at any time of the year. When once the ball of soil gets dry it is almost impossible to get it thoroughly moistened again, without immersing the pot in a pail of water for an hour or more. When the ball of soil becomes dry it shrinks away from the side of the pot, and the water runs away through the opening. The plant dies very quickly when that happens; if it loses its leaves it cannot be revived again like many soft-wooded plants. Most of the younger generation of gardeners have never learned the art of cultivating Heaths, because so few are grown at the present day. Heaths should be kept in a greenhouse during winter, where frost is just excluded, and during summer they should be plunged outdoors and watered carefully.

Failure with Muscat of Alexandria Grapes.—*C. R.* The Muscat of Alexandria Grapes sent for examination are suffering from shanking. This is one of the worst troubles the Grape-grower has to contend with, and the cause of it is often very difficult to discover. It may be due to overcropping, wet and sour borders, the roots getting into cold subsoils, excessive dryness at the roots, checks and chills, bad ventilation, or the destruction of the foliage by insect pests. In a bad case, like yours, with old vines which have been in this condition for several years, nothing short of lifting the roots and relaying them in fresh compost will obviate the trouble. It would, however, be better and cheaper to plant young vines in an inside border only. The drainage should be examined, as this is of the utmost importance. Vines will not thrive in stagnant conditions. The soil best suited to the vine is a calcareous, turfy loam, with the right materials added, such as burned earth, lime rubble and wood ashes, adding one hundredweight of bone-meal and one hundredweight of vine manure to each two tons of compost. Three or four feet of border will be sufficient for the first two or three years, adding two feet of similar compost every two years afterwards until the border is completed. Plant young, green vines in the spring, or ripened canes of the previous year's growth, spreading out the roots carefully. Plant the vines firmly, three-and-a-half feet apart, give the roots a copious watering and pay careful attention to cultural details.

Melon Fruits Disfigured.—*J. G. S.* There was no disease present on the Melon fruit sent. The blemishes, which are only skin deep, have been caused by an excess of moisture during sunless weather. These blemishes are quite common on frame Melons during dull and damp weather unless most careful attention is paid to atmospheric moisture and ventilation. Admit a little air early in the morning, or, better still, a little during the night, commencing at 8 p.m. or 9 p.m., as this will dispel the excess of atmospheric moisture which is the cause of the trouble when the sun bursts out suddenly in the morning.

Muscat Vines Failing.—*H. W.* We have examined the Muscat vine shoots carefully and fail to find any disease present on them. The leaves are very soft in texture, and from their general appearance they appear to have been scorched; the wood is quite healthy. We think the vine has suffered from an excess of moisture at the south-east end of the house, and a sudden burst of sunshine has been the immediate cause of the trouble. Atmospheric moisture is of the greatest importance to the healthy progress of the vine, and during the recent sunless weather, ventilation has demanded special attention. The object of ventilation is not merely the regulation of the temperature, but also the admission of fresh air, which is so important to the health of the vine. If a little air had been admitted at 7 p.m. or 8 p.m., after the house had been closed early in the afternoons, with plenty of moisture, this would have hardened the leaves and scorching would not have taken place.

Mosaic Disease of Peas.—*C. S.* It is possible that the mottling of the Pea leaves which you submitted for examination is caused by mosaic disease, but the proof of this assumption can only be decided by direct innoculation. You should extract the juice from a mottled plant, place six drops on each of six leaves of a healthy Pea and then prick through the drop into the tissue underneath, making three or four wounds to each drop. If the healthy Pea becomes mottled within thirty days from the time of innoculation the trouble is mosaic disease.

Names of Plants.—*G. H. L.* 1, Evidently Solanum ciliatum; 2. not recognised, a leaf and flowers should be sent. *R. R. S.* Asplenium Nidus (broad frond); Davallia platyphylla (five feet high); Nephrolepis sp. (two feet high), specimen very much shrivelled; specimens sent for naming should each have a number attached for purposes of identification. *H. F.* 1, Carduus heterophyllus; 2. Medicago lupulinus; 3. Lychnis alba; 3, Malva rotundifolia. *Glentulchan.* 1, Colutea arborescens. *E. H.* 1, Berberis japonica; 2. B. Hookeriana var. viridis; 3, B. concinna; 4. Spiraea Anthony Waterer; 5. S. Aitchisonii; 6. Deutzia crenata var. Pride of Rochester; 7, Thuya dolabrata; 8. Cupressus Lawsoniana var. intertexta; 9. C. Lawsoniana; 10, C. L. var. erecta viridis. *Doncaster.* Lonicera tatarica. *G. J.* The specimen is a very small or stunted plant of the garden Radish (Raphanus sativus), which has flowers varying from purple to white, according to the variety. A plant grown from the first in good soil would make a large root and produce a branching stem, one or two feet high or more. Most of the large-flowered Cruciferae have more or less fragrant blossoms.

Plantains on Lawns.—*G. F.* Plantains may be killed by the use of lawn sand, if the proper time is selected to apply it. The weather should be dry and likely to remain so for twenty-four to forty-eight hours to give the lawn sand time to take effect. If applied in showery or wet weather it will make the Plantains grow more vigorously, because it contains a fertiliser. The lawn sand may be made stronger without injury to the grass by adding one quarter pound of common or table salt to every two pounds of the lawn sand and mixing them well. The salt should be finely powdered and both should be perfectly dry at the time of application. It must not be supposed that you can kill large Plantains with one application, because the stronger ones will grow again. Dust the whole lawn at first, and when the strong Plantains grow again dust them only. This may be done now, but March and April are the best months in which to kill weeds, because they have drawn considerably upon their reserves to make the young foliage.

Pool for Bathing.—*W. R. B.* The three materials which you propose to use in order to disinfect the 70,000 gallons of water to make them suitable for bathing purposes would be quite useless. A higher concentration of disinfectant is needed in order to sterilise the water. The amount to be used and the nature of the disinfectant would depend largely upon the actual infection. Permanganate of potash used at the rate of two pounds per one thousand gallons of water is a very good means for purifying the water, and if used at this strength the water when used for watering plants would have no detrimental effects on the latter whatever. Permanganate of potash is extensively used by growers under glass. The permanganate would slightly colour the water, but this would disappear very rapidly after the material had decomposed in giving off its oxygen in purifying the water.

Pollenators for Cherries Black Heart and Black Eagle.—*S. J. T.* Black Heart and Black Eagle are usually in flower within a week of one another; if you wish to make more sure of cross fertilisation you might plant either Early Rivers or Knight's Early Black, if you want another good black Cherry, or Elton, if you want a delicious yellow Cherry; but Elton does not thrive well on all soils.

Strawberries.—*P. R. S.* The cold spring is doubtless responsible for your Strawberries being small in size. Root action was very slow at the time when the fruit trusses were forming.

Tomato Mildew and Onion Disease.—*W. N.* The brown fungus on the underside of your Tomato leaves is Cladosporium fulvum, the cause of what is generally known as Tomato mildew. The best way to control this disease is to ventilate the houses as much as possible and thin the foliage to allow the air to circulate freely around each plant. The diseased Onion is attacked by Sclerotium cepivorum. The only method known for exterminating this disease after it has become established in the ground is by starving out the fungus from the soil. Onions and allied crops should not be grown on the land for eight or ten years. During this time the soil should be worked as much as possible and new Onion beds should be placed as far as possible from the infected land. Diseased bulbs should be burned so soon as they are seen.

Weeds in a Copse.—*F. J. S.* The weed is Allium ursinum (Ramsons), and is unpleasantly odoriferous, especially when trodden upon. It flowers from April to June, so the whole plant should be cut down some time before it reaches the flowering stage, when the bulbs are partly exhausted by the production of leaves and flower scapes. As a result of this early cutting, the bulbs may send up secondary leaves, which should be cut again. The bulbs of all the Onion family are very retentive of life and may grow again next year, though much weaker, but each season when the leaves are well developed, they should be cut again to exhaust the bulbs. If you prefer it, the exhaustion of the bulbs could be carried out by dusting the foliage with lawn sand, to every four pounds of which one pound of table salt could be added and well mixed. Select a dry day for the operation, and repeat it as this becomes necessary. No doubt the ground is full of seeds, and if these spring up it will be more easy to exhaust and kill them than the old plants.

Communications Received.—J. C. B.—J. P.—E. J. W.—B. M.—M. H.—J. A. J.—A. J. M.—Reader.—A. B. H.—E. M.—H. J. J. (thanks for 1/- for R. G. O. F. Box).—G. H. H.—B.—H. E. M.—H. C.—T. H. E.—L. C.—W. C.—J. O. B.

MARKETS.

We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Tuesday by the kindness of several of the principal salesmen, who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general average for the week preceding the date of our report. The prices depend upon the quality of the samples, the way in which they are packed, the supply in the market and the demand, and they may fluctuate, not only from day to day, but occasionally several times in the day.—EDS.

COVENT GARDEN, *Tuesday, July* 20, 1926.

Plants in Pots, etc.: Average Wholesale Prices.

(All 48's except where otherwise stated).

	s. d. s. d.
Adiantum cuneatum per doz. ...	10 0-12 0
—elegans ...	12 0-15 0
Aralia Sieboldii	9 0-10 0
Araucarias, per doz.	30 0-42 0
Asparagus plumosus	12 0-18 0
—Sprengeri ...	12 0-18 0
Aspidistra, green	36 0-60 0
Asplenium, doz.	12 0 18 0
—32's	24 0-30 0
—nidus	12 0-15 0
Cacti, per tray —12's, 15's ...	5 0—7 0
Crassulas, 48's, per doz. ...	24 0-30 0
Crotons, per doz.	30 0-45 0
Cyrtomium ...	10 0-25 0
Fuchsias, 48's per doz. ...	12 0-18 0
Heliotrope, 48's, per doz. ...	12 0-15 0
Hydrangeas, pink, 48's, per doz.	24 0-30 0
—white, 48's per doz.	24 0-27 0
Hydrangeas, blue, 48's, per doz.	24 0-36 0
Ivy Geranium, 48's, per doz.	15 0-18 0
—60's per doz. ...	9 0-12 0
Lilium longiflorum (Harrissii) 48's, 32's, per doz.	21 0-30 0
Marguerites, 48's per doz. ...	18 0-21 0
Nephrolepsis in variety ...	12 0-18 0
—32's	24 0-36 0
Palms, Kentia	30 0-48 0
—60's	15 0-18 0
Pteris, in variety	10 0-15 0
—large, 60's ...	5 0—6 0
—small	4 0—5 0
—72's, per tray of 15's	2 6—3 0
Rhodanthe, 48's, per doz. ...	12 0-15 0
Roses, Polyantha 48's, per. doz.	24 0-30 0

Cut Flowers, etc.: Average Wholesale Prices.

	s. d. s. d.
Achillea The Pearl per doz. bun.	5 0—8 0
Adiantum decorum, doz. bun.	8 0-10 0
cuneatum, per doz. bun. ...	6 0—8 0
Alstroemeria, per doz. bun.	6 0—8 0
Asparagus plumosus, per bun., long trails, 6's	2 0—3 0
med. sprays	1 6—2 6
short	0 9—1 3
—Sprengeri, bun. long sprays...	1 6—2 0
med. „ ...	1 0—1 6
short „ ...	0 4—1 0
Asters, white per doz. bun ...	6 0-12 0
Carnations, per doz. blooms .	1 0—2 6
Clarkia, per doz. bun.	4 0—5 0
Coreopsis, per doz. bun.... ...	1 6—2 0
Cornflower, pink, per doz. bun.	2 0—2 6
—blue, per doz. bun.	1 3—1 6
Croton leaves per doz. ...	1 9—2 6
Daisy, Giant White per doz. bun....	2 6—3 0
Eryngium, per doz. bun. ...	6 0—8 0
Fern, French, per doz. bun.	10 0-12 0
Forget-me-not, per doz. bun.	6 0—8 0
Gaillardias, per doz. bun. ...	2 6—3 0
Gardenias, 12's, 18's, per box	6 0—9 0
Gladiolus, The Bride, per doz. bun.	8 0-12 0
—primulinus 6's, per doz. bun....	9 0-12 0
—various Giant varieties, per doz. spikes ...	3 0—5 0
Godetia, per doz. bun.	4 0—5 0
Gypsophila elegans ...	5 0—6 0
—paniculata ...	8 0-10 0
Heather, white, per doz. bun.	10 0-12 0
pink, per doz. bun.	9 0-12 0
Lapageria, white, per doz. blooms	2 6—3 6
Lilium longiflorum long, per doz.	2 0—2 6
Lilium speciosum rubrum, long, per doz. blooms ...	2 6—3 0
—short doz. blooms ...	2 0—2 6
—lancifolium album, per doz. blooms ...	2 6—3 0
Lily-of-the-Valley, per doz. bun.	18 0-30 0
Orchids, per doz. —Cattleyas ...	30 0-36 0
Roses, per doz. blooms—	
—Madame Abel Chatenay ...	1 6—2 0
—Molly Sharman Crawford	1 6—2 0
—Richmond ...	1 6—2 6
—Columbia ...	2 0—2 6
—Golden Ophelia	1 6—2 0
—Sunburst ...	1 6—2 0
—Mrs. Aaron Ward	1 6—2 0
—Madame Butterfly	2 0—3 0
Scabiosa caucasica, per doz. bun....	4 0—5 0
Smilax, per doz. trails	4 0—5 0
Statice latifolia, per doz. bun	12 0-15 0
—sinuata per doz. bun. ...	9 0-12 0
—Suworowii ...	9 0-12 0
Stephanotis, per 72 pips... ...	3 6—4 0
Stock, double white, per doz. bun.	4 0—6 0
Sultan, white per doz. bun.	6 0—8 0
—yellow, per doz. bun...	6 0—8 0
—mauve, per doz. bun.	6 0—8 0
Sweet Peas, per doz. bun. ...	4 0—9 0
Violas	1 0—1 6

REMARKS.—Similar conditions prevail as those recorded last week. Supplies generally have been sufficient for the moderate demand. Large supplies of Carnations and Roses have been on sale during the past week, and on some mornings consignments have been difficult to clear, even at very low prices. Lilium longiflorum, after a very bad week, were a trifle firmer in price this morning. More blooms of L. longiflorum are on offer, and those of L. l. rubrum are the finest offered for some time past; prices for these Lilies are on the down grade. Sweet Peas have been arriving in a very poor condition, many boxes being practically unsaleable. Sweet Sultans are a very attractive line just now, the blooms being of good quality. There is a good selection of large-flowered Gladioli from home-growers, and the spikes are retaining their price owing to their very fine quality. Small consignments of these blooms are being received from Holland; they are cut in the bud stage, thus ensuring them arriving in good condition. Statice sinuata is arriving in much better condition, including white, pink, mauve and yellow varieties; the prices of these flowers are further reduced. The newest subjects are Gypsophila paniculata and Statice latifolia. There are ample supplies of double white Stock. Best quality Asters are very limited in quantity and their prices are still high.

Fruit: Average Wholesale Prices.

	s. d. s. d.
Apples, New Zealand—	
—Sturmer ...	10 0-11 0
—Newtown ...	— 10 0
—Dunn's Seedling	9 0-10 0
—Statesman ...	9 0-10 0
Apples, Tasmanian	10 0-10 6
Apricots, Spanish per crate ...	3 0—6 0
—French, ...	3 0—6 0
Bananas	14 0-22 6
Black Currants —English, per lb.	0 7—0 9
Cherries (English)—	
—Black, per ½ sieve	8 0-20 0
—White, per ½ sieve	3 0-10 0
—(Italian) 11 lb. tray ...	7 0—8 0
Currants, Red per lb.	0 3½-0 6
Figs, forced, per doz.	4 0-12 0
Gages, Spanish, per ½ sieve ...	10 0-14 0
Gooseberries—	
—Kent, halves—	
—Dessert	5 0-8 0
—Cooking	2 0-3 0
—Leveller, per lb.	0 6-1 0
Grape Fruit ...	50 0-52 6
Grapes, English Black Hamburgh	1 3—2 3
—Gros Colmar	2 0—2 6
—Alicante ...	1 3—2 6
—Muscat ...	2 6—4 6
Lemons, Messina, per case ...	15 0-20 0
—Naples, box	15 0-20 0
Melons—	
—Forced Guernsey special ...	3 0—7 6
—Canteloup ...	4 0-10 0
—others	2 0—4 0
Oranges—	
—Californian ...	20 0-22 0
Peaches, Belgian, per doz. ...	3 0—6 0
—English, per doz.	6 0-12 0
—Italian, per tray	2 0—3 6
Pines...	2 0—4 0
Plums, Spanish, per crate ...	6 0-10 0
—French ...	5 0—8 0
—French, per ½ sieve	6 0-10 0
Raspberries—	
—Special dessert, per lb.	1 3—1 6
—Other, per 4-lb. chip	2 0—3 0

Vegetables: Average Wholesale Prices.

	s. d. s. d.
Beans—	
—Guernsey and Worthing forced	1 3—2 0
Beets, per cwt.	6 0—8 0
Cabbage, per doz.	1 6—2 0
Carrots, new, per doz. bundles	2 6—4 0
Cauliflowers, per doz.	2 6—3 0
Cucumbers, per doz.	4 0—6 0
—Flats	10 0-16 0
Horseradish, per bundle ...	1 6—2 0
Lettuce, round, per doz. ...	0 9—1 6
Marrows —Outdoor... ...	4 0—6 0
Mint	1 6—2 0
Mushrooms,	
—cups ...	2 6—3 0
—Broilers ...	1 0—2 0
Onions—	
—Valencia ...	7 0—9 0
Parsnips, per cwt.	5 0—6 0
Peas, English per bushel. ...	2 6—5 0
Potatos—	
—King Edward per cwt. ...	6 0—6 6
—others	4 0—5 0
New Potatos— per bushel ...	3 6—4 6
Spinach, per bushel	3 0—4 0
Tomatos—	
—English, pink,	7 0—8 0
—pink and white	7 0—8 0
—blue	5 0—6 6
—white	5 6—6 6
—Guernsey ...	6 6—7 0
Turnips, per cwt.	5 0—7 0
—new, per doz. bunches ...	6 0-10 0
Turnip Tops, per bag ...	3 6—4 0

REMARKS.—Business in some sections has not been altogether satisfactory. The hot weather, while favouring the demand, has, to some extent, affected the condition of the fruits adversely. Grapes, Peaches, Nectarines and Figs are a steady trade. Melons are cheaper, after a period of excellent trade. Strawberries are finished, except for a few belated consignments. English Cherries are poor in quality generally, and parcels of sound fruit are the exception. Black Currants are less plentiful and their prices are a shade higher. Gooseberries are a variable business. Special yellow dessert berries sell fairly well, but the commoner dessert varieties and cooking berries are a very slow trade. Tomatos, after some improvement in quotation, are falling in value, owing to increased supplies. Cucumbers are scarcer and dearer. Forced Beans continue to sell well but the earliest out-door Beans are now being marketed, and the prices of the former will go lower. Supplies of Mushrooms are on the short side. Green vegetables are not a particularly keen business, although supplies are not plentiful. Trade in Potatos is moderately good.

GLASGOW.

The tropical heat of the past week hastened the production of summer flowers, and by shortening the lasting qualities of the blooms when cut, diminished their market value. This was particularly the case with Sweet Peas, which arrived in the market in excessive quantities daily, with the result that well-grown spikes were only worth from 1d. to 3d. per bunch, while special blooms of exhibition quality only made from 4d. to 6d. The prices for large bunches of Erigeron ranged from 2d. to 4d.; Morning Star, made 1d. to 2d.; Alstroemeria, 3d. to 4d.; Irises, 2d. to 3d.; Calendula, 1/- to 3/- per box; Roses, 2/- to 4/- per dozen; Carnations, 1/- to 2/6 per dozen; Gladioli, 2/- to 4/-; Lilium longiflorum (Harrisii), 3/- to 4/- per bunch; Gypsophila, 1d. to 3d. per bunch; Smilax, 9d. to 1/-; and Asparagus, 6d. to 1/-. A small first consignment of early-flowering Chrysanthemum (Holmes' White) realised 6d. per bunch. The flowers were short in the stem.

An interesting feature of the fruit market was the first arrival of Bartlett Pears from California. The fruits having been shipped direct from New York were in first-class condition and sold readily at £2 10s. per case of 45 lbs. thus establishing new high records both as regards earliness and prices. The first of the new season's Californian Plums were disposed of at 20/- to 24/- per case. Strawberries, which had been cheap at 2½d. to 7d. per lb. earlier in the week, were scarcer towards the close of the week, and 1d. per lb. dearer. Prices for Black Currants ranged from 11d. to 1/4 per lb. Gooseberries, 3/- to 4/- per ½ bushel, Apricots, 6/- to 8/-, Cherries, 12/- to 14/-, Red Currants, 8d., Raspberries, 1/-, and Cherry Plums, 8/- per boat. In the vegetable section Lettuces were cheap and plentiful at 6d. to 1/- per dozen, while Scotch Tomatos declined to 7½d.—9d. per lb. English Tomatos made 6d. to 6½d., but Guernsey fruits advanced to 8d. per lb. French Beans realised 1/10 to 2/- per lb. Cucumbers, 4/- to 6/- per dozen; and Mushrooms, 2/-.

SCHEDULES RECEIVED.

BOLTON HORTICULTURAL SOCIETY.—Exhibition on July 19.—Secretary, Mr. J. A. Parker, Cromptons, Regent Road, Lostock, Bolton.

FALKIRK ROSE SOCIETY.—Exhibition on July 24.—Secretary, Mr. W. Short, 31, Albert Road, Falkirk.

DUMBARTONSHIRE SWEET PEA SOCIETY.—Exhibition to be held at Helensburgh on July 31.—Secretary, Mr. Robert Miller, Levengrove Park, Dumbarton.

ABBEY PARK FLOWER SHOW.—Exhibition to be held in Abbey Park, Leicester, on the 3rd and 4th of August.—Secretary, Mr. R. Lisle, Superintendent of the Abbey Park.

OXFORD FLORAL FESTIVAL, to be held from the 9th to the 14th of August.—Secretary, Mr. H. Parker, 12, Hurst Street, Oxford.

ROYAL HORTICULTURAL SOCIETY OF ABERDEEN.—Exhibition, August 12-14 (not 19-21 as first announced).—Secretary, Mr. J. B. Rennett, 231, Union Street, Aberdeen.

ROYAL HORTICULTURAL SOCIETY OF PERTHSHIRE.—Exhibition at Perth on August 18 and 19.—Secretary, Mr. J. G. Young, 59, South Methven Street, Perth.

PEEBLES HORTICULTURAL SOCIETY.—Exhibition at Peebles on August 19. Also Chrysanthemum Exhibition on October 9.—Secretary, Mr. D. Young, Bonnycraig, Peebles.

FORFAR HORTICULTURAL SOCIETY.—Exhibition on August 20-21.—Secretary, Mr. J. C. Robbie, South Whitehills, Forfar.

DUNFERMLINE HORTICULTURAL SOCIETY.—Exhibition on August 27-28. Also Chrysanthemum Exhibition on November 12-13.—Secretary, Mr. John Hynd, 53, Victoria Street, Dunfermline.

AYR CHRYSANTHEMUM SOCIETY.—Exhibition on November 17.—Secretary, Mr. J. S. SMITH, Robsland Avenue, Ayr.

GARDENING APPOINTMENTS.

Mr. W. Y. Staward, late of Burrough Hill, Melton Mowbray, Leicestershire, as gardener to LADY MARGARET RYDER, Knowle, Dunster, Somersetshire.

Mr. John Lingwood, for the past twenty-five years gardener to the late M. G. RIGDEN, Esq., and S. F. RIGDEN, Esq., Queenswood, Englefield Green, as gardener to the Rt. Hon. Lord FITZALAN OF DERWENT, P.C., Cumberland Lodge, Windsor. (Thanks for 2/6 for R.G.O.F. box.—EDS.).

Mr. F. C. Saunders, for the past eleven years gardener to the late T. HOPGOOD, Esq., Shustoke House, Coleshill, as gardener to H. P. CHATTOCK, Esq., Blyth Cottage, Coleshill, Birmingham. (Thanks for 2/- for R.G.O.F. box.—EDS.).

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THE
Gardeners' Chronicle

No. 2066.—*SATURDAY, JULY* 31, 1926.

CONTENTS.

Alpine garden—
  Primula Mooreana... 87
  Primula Palinuri ... 87
  Silene Saxifraga ... 87
Animals, trespass by... 95
Annuals at Regent's Park 93
Apple grafted on the Willow 96
Apple, Pear and Plum crops in Belgium ... 82
Belgian Dahlia exhibition 81
Bird Sanctuaries ... 83
Bulb garden—
  Brodiaea ixioides ... 87
  Tritonia hyalina ... 87
Conference on flower and fruit sterility ... 94
Covent Garden market through Austrian eyes 83
Cyanogas, uniformity in composition of ... 93
Edinburgh, notes from 91
Eichhornia crassipes... 86
Flowers, the fragrance of 81
Forestry development in Scotland... ... 81
Fruit register— ...
  Cherry Governor Wood Bigarreau... 96
  Pear Thompsons ... 96
"Gardeners' Chronicle" seventy-five years ago 83
Garden notes from south-west Scotland 90
Gardens, classical and legendary 90
Hampton Court, increased fees at ... 81
Hardy flower border—
  Morina 88
  Some beautiful hybrid Eremuri... 88
Horticultural continuation classes in Germany 81
Mesembryanthemum 89
Obituary—
  Benary, John ... 99
  Pemberton, Rev. J. H. 99
  Ross, Joseph 99
Orchid notes and gleanings—
  Coelogyne 86
  Insect pests of Orchids 86
Parks and gardens, public 93
Potato, intervarietal differences in the ... 95
Regent's Park, annuals at 93
Societies—
  Elstree and District Horticultural ... 98
  Manchester and North of England Orchid 99
  National Rose ... 96
  Royal Caledonian ... 99
  Royal Horticultural 97
  Tamar Valley and District 96
Traveller's observations, a 92
Trees and shrubs—
  A new race of hardy Azalea 88
  Olearia insignis ... 88
  Polygala Chamaebuxus angustifolia 88
Truffaut, M. Georges... 82
Week's work, the ... 84
Welsh garden, notes from a 92

ILLUSTRATIONS.

Nymphaea amabilis 83
Olearia insignis 91
Pemberton, Rev. J. H., portrait of the late 99
Pleiospilos Bolusii 88, 89
Primula Palinuri 85
Rose Lady Worthington Evans 97
Tritonia hyalina 87
Truffaut, M. Georges, portrait of 82

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last fifty years at Greenwich 62·1°.

ACTUAL TEMPERATURE—

The Gardeners' Chronicle Office, 5, Tavistock Street, Covent Garden, London, Wednesday, July 28, 10 a.m. Bar. 32.3. Temp. 64°. Weather, Dull.

The Fragrance of Flowers.

It is just a hundred years ago that John Douglas collected and introduced the Musk (Mimulus moschatus) into this country from plants which he found "growing sparingly on the margins of springs in the country about the river Columbia in North West America." Of the leaves of this plant John Lindley writes in the *Botanical Register* 1118, XIII, 1825, "Moschum gratissimum redolenta"; but now the redolence of Musk has departed from Mimulus moschatus or only lingers in occasional plants. The subject of this loss, which was discussed in these pages by Mr. E. M. Holmes,* is in itself an intriguing one, but inasmuch as there is nothing new to add to Mr. Holmes' observations, it need not be considered again now. But when we read that at the recent Rose Show held under the auspices of the National Rose Society, no Rose was judged worthy of the gold cup offered by the *Daily Mail* for the best new scented Rose, we might be tempted to the reflection that unless our plant raisers devote more deliberate attention to this quality of odour the Rose may go the way of the Musk. Not, we think, the old Roses. They will always be grown and we venture to believe will always remain faithful to their fragrance. But it is the new Roses that, asking like Oliver Twist for more, the impatient might be tempted to urge raisers to have care. Beauty of form and of colour they have given us without stint, but of odorous and nice new Roses they might seem to have been too niggardly. Everyone knows, of course, that the raiser of new varieties of Roses- and for that matter of anything of the plant kind—has to submit to a thousand disappointments for a single conspicuous success. Nor in his search of a method to keep a hand on fragrance can he look for any real help from science. So far as we know the genetics of plant fragrance have never been elucidated, though why this should be so it is hard to say. It would be of some help to the raiser of novelties if he knew, for example, whether odour is a dominant or a recessive character, and whether it is inherited in constant manner whichever way a cross between a scented and a scentless variety is made. There is ground for thinking that in some plants fragrance is dominant; at all events in a hybrid Wallflower under our notice, the parentage of which is known, the scent which came from the male parent is conspicuous in the first generation. It would, of course, be incorrect to aver that Rose growers have neglected the search after odoriferous novelties. We need only call to mind the new and fragrant Bedford Crimson, Mrs. George Norwood and Lady Helen Maglona. It may also be questioned whether public taste is as constantly insistent on fragrance as it is upon occasion, for if it were our Rose gardens would be far more redolent of odour, like the Musk used to be, than most of them are. For, as the excellent manual* issued by the Rose Society records, there are to be enjoyed no fewer than forty-four varieties of very fragrant Roses. Among this number is, of course, a large proportion —considerably more than half—of H.T.s, including General McArthur, George Dickson, Hoosier Beauty, La France, for those who can grow it, Mme. Abel Chatenay, Mrs. George Norwood, already mentioned, Ophelia, Richmond and others no less worthy of mention. The Rugosas give the odorous Conrad F. Meyer, the pompon polyantha section includes Eugénie Lamesch. Of fragrant Wichuraianas there are Evangeline, François Juranville, and Leontine Gervais. The H.P.'s offer General Jacqueminot, Hugh Dickson, and Mrs. John Laing. Provence in its own section is worthy of inclusion even in the most formal of Rose gardens for its scent, and where a place near by may be provided the sweet-smelling H.B. Zéphirine Drouhin should be grown, as, of course, should the Penzance Briars. A scrutiny of this list, however, will probably lead some of our readers to demur to the inclusion of all these varieties in the select list of the very fragrant Roses. For it is sad to state that fragrance is an elusive property and does not manifest itself to its full degree in all soils and situations. It may be that in the future some learned person will discourse on "manuring for fragrance," and it would certainly seem probable that the systematic application of mineral fertilizers and particularly potash salts and phosphates might result in the full evocation of this quality. It is almost certain that many carefully tended Rose gardens receive more nitrogenous manure in proportion to other essential food materials than is good for them, and it would be interesting to know whether those who have tried additional fertilizers have observed any increase of fragrance of the plants so treated.

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* *Gard. Chron.* LXXV., 3rd series, February 9, 1924.

* *Select List of Roses and Instructions for Pruning.* National Rose Society, 1925.

Joseph Chamberlain as Garden Designer.—It is interesting to note that the Large Gold Medal of the Massachusetts Horticultural Society has this year been awarded to Mrs. William Endicott, of Danvers, Mass., for her garden, a part of which was designed by the Rt. Hon. Joseph Chamberlain, in 1897, when on a visit to the United States. He also, in the succeeding year, planned a shrubbery in the same garden, and the drawings made for the purpose by this famous visitor are still in existence. The origin of this very beautiful estate is worth noting. During the war of 1812, a Mr. Joseph Peabody hired a piece of land in Danvers for the storage of cargos which, if left at the wharf in Salem, might have been bombarded by the British. When the danger was over, and the cargos finally removed, the land was retained, added to, and laid out, passing at last into the hands of the present holder, Mrs. Endicott, née Peabody. Even now, the gardens are quite distinctly divided into three the original garden, laid out in Dutch style by George Heussler, the one designed by Mr. Chamberlain, and a Rose Garden which has only recently been completed.

Increased fees at Hampton Court.—It has been decided to increase, from August 1 next, the charge for admission to the State Apartments and Picture Galleries at Hampton Court. In the future one shilling per head will be charged on Mondays, Tuesdays, Wednesdays and Thursdays. There will be no charge on Sundays, Saturdays and Bank Holidays.

Forestry Development in Scotland.—At the annual meeting of the Landowners' Co-operative Forestry Society, held at Edinburgh on the 19th inst., the Chairman, Mayor Mark Sprot of Riddell, said that the most satisfactory feature of the Society's work during the past year was the active part it was taking in helping landowners to restock the areas which had been cut during the war and to plant new areas. The Society had sold to its members nearly two million plants during the last planting season. Maclachlan of Maclachlan was elected President in succession to Mayor Sprot, whose term of office had expired, and Lord Novar was elected to the office of Vice-president.

Belgian Dahlia Exhibition—An International Exhibition of Dahlias, Roses and other flowers will take place at Borgerhout, near Antwerp, from 28 to 30 August. The place chosen is the Fetes Hall of the communal park; many valuable prizes have been offered, and the event should prove very popular. As it is the fiftieth anniversary of the foundation of the Royal Dahlia Society, it is hoped that it will be especially successful.

Horticultural Continuation Classes in Germany.—In order to afford opportunities to working gardeners and nursery employees to increase their knowledge of the different branches of their profession, classes have been started by the authorities of the Oranienburg (Berlin) horticultural college. For the convenience of those working full time, the classes are held on Sunday morning, and on one or two evenings in the week. At present the instruction is of a general nature, but specialised instruction may be provided if there seems to be a demand.

It has been found expedient to place a downward age limit of twenty-five years, but of the students who have already taken advantage of the classes twenty-one were over thirty, and eight over forty years of age.

Apple, Pear and Plum Crops in Belgium.—The *Nation Belge*, of July 10, states that Apples are not very plentiful this year, but that Pears, especially the late varieties, are good. There will also be a good crop of Plums in Belgium.

A New Park Public for France.—The ruined Abbey of Chiális, with its extensive park, is to be dedicated as "a place of beauty and repose for all Frenchmen." This has been made possible by the generosity of the late Mme. Jacquemart-André, who left it in trust to the *Institut de Paris*, together with an endowment of five million francs, which is to be shared between Chiális and the museum in Paris which bears Madame Jacquemart-André's name. The park is abundantly wooded and well watered, and the will provides that no part of the estate is to be sold.

How to determine the Cubical Contents of a Greenhouse.—The following useful information on how to determine the cubical contents of a greenhouse for fumigating purposes is given in the U.S.A. Department of Agriculture *Circular* No. 380. First find the area of the end of the house and multiply it by the length. If all the dimensions used are expressed in feet, the result will be the volume in cubic feet. Upon the shape of the end of the greenhouse depends the method of computing its area. Almost without exception, the end of a greenhouse has a horizontal base and vertical sides. The height of each side and the height of a ridge above the floor are dimensions which must be known. In addition, if the sides are of the same height, that is, if the greenhouse is of the "even-span" type, the width of the house should be multiplied by the average height, or half the sum of the height of one side and the height of the ridge. If the sides are unequal, it will be necessary to find the horizontal distance from the foot of each side to the foot of a vertical line through the ridge, dividing the end into two parts. The area of each part can be found by multiplying its width by its average height, or half the sum of its two vertical sides, one of the two being always the height of the ridge. For example, in the case of an even-span greenhouse twenty feet wide, five feet high at the eaves, ten feet high at the ridge and one hundred feet long, we have for the area of the end $\frac{10+5}{2} \times 20 = 150$ square feet; and for the cubical contents, $150 \times 100 = 15,000$ cubic feet.

An Interesting Collection—The Department of Botany of the British Museum has acquired a collection of about a thousand microscopic preparations illustrating the structure and development of the seedling, the leaves and other parts of numerous species of Orchids. This interesting collection, which was the result of the patient and persevering work of the late Mr. J. Charlesworth, has been generously presented to the Museum by the Haywards Heath firm, Messrs. Charlesworth and Co. The Department has also purchased 1,385 specimens of Mosses collected in southern Brazil by Dr. Schiffner.

A New Park for South-east London.—Last Saturday, Sir G. Hume, Chairman of the London County Council, dedicated to the use of the public the recently acquired thirty acres of the Maryon-Wilson estate in the Blackheath district. The new park is well-wooded and pleasantly undulated, and is situated between Little Heath, Charlton, and Thorntree Road, It is the gift of Sir Spencer Pocklington Maryon Maryon-Wilson, and is one of the reputed haunts of Dick Turpin and other highwaymen

Hampton Court Gardens.—Mr. Ernest Law has recently amplified his useful *Flower Lovers' Guide to the Gardens at Hampton Court* with an addition containing a full description of the arrangement of the flower beds and borders throughout the gardens, and the book is now entitled, *Hampton Court Gardens, Old and New*. In some general statistics in the opening chapters Mr. Law mentions that fully half-a-million plants are used annually in the gardens, and that these include 20,000 Pansies, 12,000 Arabis and Antirrhinums, and 10,000 Heliotropes and Chrysanthemums. The famous vine and its annual yield, in fruit and money, also receives mention in this book, which is "intended mainly for popular use," but which will be found of great interest to the horticulturist.

M. Georges Truffaut.—M. Georges Truffaut, the elder son of the late M. Albert Truffaut, of Versailles, obtained his early insight into horticultural practice under his father at the famous Versailles nursery establishment, and was later employed for some time at Messrs. James Veitch and Sons' Nurseries at Chelsea. The original Versailles establishment now no longer exists, having finally disappeared in 1921, owing to the encroachments of the railway but long before this (in 1897), M. Georges Truffaut had founded in his own name a flourishing business of many ramifications, which took shape in 1923, as the S.-A. des Etablissements et Laboratoires Georges Truffaut, with a capital of four million francs, of which he is the President and Managing Director. He specialises in garden design, and in insecticides, fungicides and chemical manures: he is also editor of *Jardinage*, a very interesting horticultural periodical. During the war M. Truffaut did a great deal of work in connection with food-production in France, and raised millions of seedling vegetables for planting in the vicinity of the various large camps, being created in recognition of his work a Chevalier of the Legion of Honour. M. Truffaut is well-known to a large circle of British horticulturists and scientists, but few have had the opportunity of visiting his laboratories or of seeing the very complete collection of insect pests he has accumulated in one of his galleries, or his fine collection of moths and butterflies. On the occasion of the annual meeting of the Fédération Horticole Professionnelle Internationale, however, numerous Britishers took advantage of the opportunity then offered them of visiting M. Truffaut's interesting and extensive establishment, and becoming acquainted with his numerous interests. M. Truffaut is one of the foremost horticulturists in France, and thoroughly deserves the honour in which he is held by his countrymen.

M. GEORGES TRUFFAUT.

Amorphophallus Titanum in Flower at Kew.—In the T. range at Kew, there is an exceptionally fine specimen of this giant Aroid now in flower. Amorphophallus Titanum was introduced from Sumatra in 1878, and when fully developed the flower often reaches a height of six feet or more, while the foliage is even more luxuriant. The spadix is pale green on the outside, smooth below and thickly corrugated on the upper portion. The limb is dark purplish in colour, but pale greenish at the base.

A Novel Exhibition.—We are interested to learn that the British Aquarists' Association is organising a Home Aquarium Exhibition, the first of its kind, to be held in the rooms of the British Sea Anglers' Society, 4, Fetter Lane, E.C.4. There will be gold, silver and bronze medals and other prizes for the best aquarium fish in various classes. An exhibition of this kind serves a useful purpose in stimulating interest and in disseminating knowledge about the treatment and conditions required by the fish exhibited. Many garden-owners who keep gold-fish in pools surrounding fountains, or in small out-door aquaria would be glad to know of the best conditions for keeping them alive and healthy; but without such knowledge the mortality among gold-fish is often so great as to make them expensive and unsatisfactory.

Cows Poisoned by Fruit Spray.—A case has recently been heard at the Shropshire Assizes in which a farmer obtained £400 damages for the loss of six cows, which died as the result of poisoning. It was not at first known what had caused their illness, but eventually it was found that a drum of fruit-spray left on some adjoining land had become rotted and the contents had drained into the pond from which the cows habitually drank.

Canned Fruit Competition.—In connection with the forthcoming Imperial Fruit Show there will be a canning competition which should prove of interest to many fruit growers. The most important of the regulations are as follow:—Competitors must submit a standard case or cases of cans as packed for market, from which the judges will take samples. All fruits to be in syrup except Apples. Cans to bear the usual labels normally used in marketing. All exhibits are to be packed under commercial conditions, and be fit for transport by rail. More than one entry may be made in each class. In class 5*a*, each entry must consist of one kind of fruit (*e.g.*, a case of Raspberries, a case of Strawberries, etc). Entry forms and fees should be delivered to the Secretary, Imperial Fruit Show, 17, Bedford Square, London, W.C.1, on or before October 7, 1926. Entries will also be accepted through agents and trade commissioners in Great Britain provided these reach the Secretary before October 7. The exhibits must be delivered at the Imperial Fruit Show, Holland Park Rink, London, on October 26, 1926. After judging, the exhibits will be taken over by the Show Committee, and will be sold to visitors at the retail stall in the Hall, the proceeds of such sale to be devoted to the show funds.

A New Park for Oldham.—In her will, which has now been proved, the late Mrs. Ellen Ludlaw, of the Limes, Ashton-under-Lyne, Lancashire, who died on February 3, last, bequeathed Foxhill Farm and Wortherhead Hill, near Grains Bar, Oldham, upon trust, to the residents of Oldham as a public park, subject to the proviso that the municipal authorities erect a granite obelisk, thirty feet high, on the highest part of Wortherhead Hill, with the following inscription: "This estate, of nearly fifty acres, is given for the use and benefit of the people of Oldham and district by Ellen Ludlaw, wife of James E. Ludlaw, of the Limes, Ashton-under-Lyne, in memory of her father and mother, William and Anne Bishop, formerly of Oldham."

Centenary Exhibition in Vienna.—In the spring of 1927, the Austrian Gardening Society will celebrate, with a great horticultural exhibition, the centenary of its foundation. It is hoped that this show will approximate in importance to those held before the war, and preparations for the event are already commencing. Austrian horticulturists lost heavily in consequence of the war and the unfavourable conditions which followed it, but they are doing their utmost to make up lost ground.

Imported Vegetables and Disease.—The Minister of Agriculture, Mr. Walter Guinness, M.P., received a deputation at the Royal Show at Reading from the Royal Agricultural Society, whose object was to urge upon the Minister the desirability of placing an embargo upon the importation of field vegetables, which if admitted from a country affected by foot-and-mouth disease would be a source of danger. It was pointed out by the deputation that even if the vegetables themselves were clean, the packing material, such as sacks for the importation of Potatos, might be infected. The Minister did not give the deputation much encouragement, but the Society will feel that at any rate the danger has been pointed out.

American Restrictions on Narcissus Bulbs.—As a result of a Quarantine Order promulgated by the U.S.A. Secretary of Agriculture, the interstate movements of Narcissus bulbs is now restricted. The quarantine became effective on July 15, after which date, no home-grown Narcissus bulbs must be shipped or offered for shipment interstate until they have been inspected by an authorised Federal or State authority and certified either as free from eelworm and Narcissus flies or as having been treated by the hot water or carbon bisulphate methods. This quarantine does not, of course, affect bulbs imported under special permit; these must be subjected to the hot water treatment and retained by the importing grower until released for sale by the Department.

Bird Sanctuaries in London Parks.—The Report for 1925 of the Bird Sanctuaries Committee, which has been formed under H.M. Board of Works, has lately been issued, and shows that the Sanctuaries formed in some of the large London parks have been effectual in preserving and encouraging bird life to a gratifying extent. Supplementary reports dealing individually with the sanctuaries at Hyde Park, Kensington Gardens, Richmond Park, Bushey Park, Greenwich Park, St. James' and the Green Parks, show that the reserves were largely used as resting places for birds in migration, and that a considerable number of wild birds took up their residence there for the summer. It was reported that eighteen species nested in Hyde Park, including Kensington Gardens, forty-seven in Bushey Park, and fifty-five in Richmond Park. It may be noted that a great part of the success of a small sanctuary depends upon proper planting and cultivation, including the provision of berry-bearing trees and suitable nesting bushes, the thinning out of plantations so that wild flowers, such as Foxgloves, Willow-herb, and Thistles, may grow and seed, and the sowing of Teazles, a food particularly favoured by goldfinches in the winter. In Scotland, the lead in the provision of park sanctuaries has been taken by Glasgow, and in the Royal Park of Holyrood, Duddingston Loch has been made a reserve for immigrant ducks, which much appreciate its extensive reed-beds.

Covent Garden Market through Austrian Eyes.—As it is always interesting to learn how familiar places appear to those unfamiliar with them, we give below an account of a visit to Covent Garden by the editor of a well-known Viennese florists' journal. "I will begin with the most remarkable thing we saw, and which, to me, as a florist, was of the most interest—Covent Garden Market. This is a market as big as half a district of Vienna, thickly hemmed in by houses and warehouses, in the west end of the great "fog-city"; there are markets daily, except on Sunday, from 6 to 9 a.m. The first idea that it gave me, was a desire to help to organise a similar market in Vienna; later on, however, it occurred to me that it would not be worth while to have such a large market for the small quantity of produce handled in Austria. What a sight it was! Forced Roses in thousands, with stems nearly a yard long, of sorts like Columbia, Hadley and Ophelia, with others I did not know; also a new white Rose similar to Frau Karl Druschki, but a Tea-Hybrid of good form with a good scent, bearing the pretty name of Molly Sharman Crawford. Then there were thousands of fine American Carnations in hundreds of different sorts, all of the best quality; trees of Tausendschön Roses in pyramids two yards high! and cut flowers, Narcissus white amd yellow, Myosotis, Iris and Lathyrus. In the market one can buy everything that is needed for the cut flower trade, from the simplest vase to the finest bouquet basket. I had an opportunity of conversing with some of the English growers, and they assured me that with the exception of bulbs, the greater part of the floral produce handled is home-grown. In England there is no flower tax, and the English grower maintains that to export flowers to England would be a very risky business. Perhaps I had better not mention the weather conditions which prevailed during my visit! I will only say in extenuation that the country lies much further north than Austria. The Lilac, which grows in the open in the districts round London, was looking very beautiful.

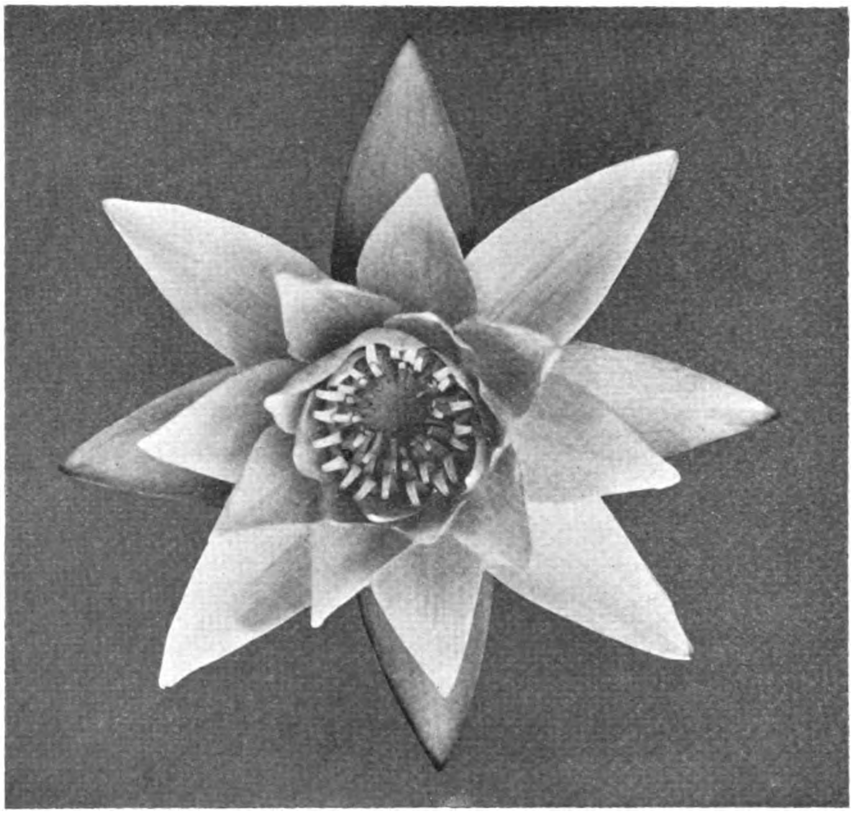

FIG. 47.—NYMPHAEA AMABILIS.

R.H.S. Award of Merit, July 13. Flowers salmon-rose, passing to bright red. Shown by Mr. Lionel de Rothschild (see p. 57.)

Appointments for the Ensuing Week.—Sunday, August 1: Wakefield and North of England Tulip Society's meeting. Monday, August 2: Kings Lynn Horticultural Society's show; Whitley Horticultural Society's show; Keynsham and District Horticultural Society's show (two days). Tuesday, August 3: Royal Caledonian Horticultural Society's meeting. Wednesday, August 4: Royal Horticultural Society of Ireland's show (three days); Royal Welsh Agricultural Society's show (three days); Scottish National Sweet Pea, Rose and Carnation Society's show (two days); Northampton Horticultural Society's show (two days); Abingdon Horticultural Society's meeting. Friday, August 6: Killearn Flower show; Accrington and District Chrysanthemum Society's meeting. Saturday, August 7: Meigle and District Flower Show; Lockerbie Flower Show; Leven and District Flower Show; Kirkcudbright Flower Show.

"Gardeners' Chronicle" Seventy-five Years Ago.—Overhanging Trees.—Trees which project beyond the boundaries of their owner's property are considered as a nuisance. If they project over a public highway, so as to interfere with the free traffic thereon, they are a public nuisance; if they project over the land of a private person his rights of property are interfered with, and the trees are a private nuisance. In the first case, *i.e.*, where the trees *interfere with the free traffic on a public highway*, they may, it would appear, be lopped by anyone who has been thereby prevented from enjoying his free use of the way, but no other injury he may sustain will justify him in taking such a course. Where the trees overhang the private property of another, it seems clear that the owner or tenant of such property may lop them, if the owner of the trees refuses so to do, after notice; *sic utere tuo ut alienum non laedes*, is a well-known legal maxim, and no person has a right to plant trees so near the boundary of his own land, as to cause them to overhang the land of his neighbour, and to interfere with the vegetation, or obstruct the light from it. Our readers must, nevertheless, take care how they lop their neighbours' trees; they must not forget that lapse of time may give a person a right to continue that which was at first only permitted; and that, although upon the principle which makes every continuance of a nuisance a new nuisance, giving a fresh cause of action, it would seem that the mere fact of the trees having overhung another's land affords no reason why they should continue so to do. *Gard. Chron., August* 2, 1851.

The Week's Work.

THE ORCHID HOUSES.

By J. Collier, Gardener to Sir Jeremiah Colman, Bart., Gatton Park, Reigate, Surrey.

Laelia.—The small, cool-growing Laelia pumila is making new growths. A favourable time for any necessary repotting of this species is so soon as young roots become active. During their growing season, plants of this species require liberal supplies of water at the roots, therefore, it is important that the compost should be sweet and porous. The most suitable receptacles are shallow Orchid pans, without side holes, but with wire handles attached for suspending them. Only a thin layer of rooting-material is necessary. This may consist of Osmunda fibre and Sphagnum-moss cut into small portions. The pans should be well-drained and the compost pressed rather firmly around the bases of the plants, placing a few living heads of Sphagnum-moss on the surface. For a short time after repotting, water should be sprinkled over the surface only, but when the young roots have become established in the new compost, the pans should be dipped in tepid water each time they become dry. This Orchid will grow with freedom in a position near the roof-glass in the cool Odontoglossum house.

Cattleyas.—The autumn-flowering Cattleya labiata, C. Gaskelliana, C. Bowringiana and the many hybrids from these species are making considerable progress. It is of great importance that they are afforded all the light possible by keeping them near the roof-glass, in order to consolidate their growths. Water should be afforded the roots liberally until the new pseudo-bulbs approach their fullest development, when the supply of moisture should be reduced considerably. If the plants are over-watered at this stage it may cause decay in the new pseudo-bulbs, and care should be taken that water is not allowed to accumulate between the outer skin and the pseudo-bulb. C. Bowringiana and its hybrids require the greatest care in this respect.

C. Mendelii and C. Mossiae.—These Orchids and many of their hybrids have passed out of flower, and should be kept slightly on the dry side in order to afford them a short period of rest. So soon as fresh root-action is observed, any repotting that is necessary should be given attention.

THE KITCHEN GARDEN.

By F. Streeter, Gardener to Lord Leconfield, Petworth Park, Petworth, Sussex.

Onions.—Exhibition Onions will now require constant attention. They need plenty of feeding in a liquid form, making sure the ground is moist before applying the stimulant. Should the ground show signs of cracking, cover it with a slight mulch of old Mushroom manure after it has been passed through a fine sieve. Autumn-sown varieties have finished their growth and should be lifted carefully, ripened and stored. It will be found profitable to use these and not attempt to keep them too long.

Herbs.—Keep the various herbs in good health by frequent applications of water. Cut off and dry any herbs required for the kitchen before they get too old and showing flower. Hang them in bunches in a store house and use them as required. Winter Parsley sown some time ago is now ready for thinning. Use the hoe freely between the rows and keep a sharp watch for green fly.

Runner Beans.—The plants are growing very rapidly and require copious supplies of water and liquid manure. A mulching will prove beneficial to the plants, which will continue in bearing until the advent of frost. Where large supplies are required, a sowing of French Beans should be made in a frame which may be covered with light material in case of early frosts. It sometimes happens that an early frost will damage such tender crops and then several good weeks of gloriously fine weather will follow.

Winter Greens.—There is still time to plant out any of the Kales, Borecoles, Broccoli, Savoys and Coleworts. Should the dry weather continue, water the plants well in their present quarters before lifting them, and also give them a thorough soaking as they are planted in their final quarters.

Lettuces.—Continue to sow plenty of Lettuce and Endive seeds for autumn and winter supplies. The days are rapidly shortening and growth will slow down, therefore, longer time should be given the various crops to develop.

HARDY FRUIT GARDEN.

By W. Auton, Gardener to Viscount Elveden, Pyrford Court, Woking, Surrey.

The Fruit Store.—Early varieties of various fruits will soon need to be placed in the fruit room, and if this has not been thoroughly cleansed already it should now be done. See that all stages are well-scrubbed and walls and ceilings lime-washed. Trays should be overhauled, cleansed and left outside for a time to become thoroughly dry and sweet.

Filberts and Cobnuts.—Nut bushes are making strong growth, and shoots which have made sufficient length to fill the spaces required may now be stopped. If there are more shoots than needed they may be thinned so that light and air is admitted freely to every part of the tree. Feeding is often neglected in the case of Filberts and Cobnuts, yet bushes carrying heavy crops need stimulants as much as other fruits.

Figs.—Growth on Figs in the open is now free and the stopping and training of the shoots will need constant attention. Allow every shoot ample room for full development and stop the remainder at the second leaf as needed. The border for Figs is generally restricted, and frequent, copious waterings will be necessary during the growing season.

Peaches and Nectarines.—Early varieties of these fruits on walls will be approaching the ripening stage, and the fruits should be exposed to full light to ensure good colour. Where birds are troublesome, nets should be brought into position to protect the fruits. If hung loosely at the bottom they will also serve to catch ripe fruits that may drop. See that the trees do not suffer from lack of moisture at the roots or the fruits will not finish well: at the same time guard against heavy waterings just as the fruits reach maturity.

Blackberries.—This is a valuable fruit for late summer and autumn supplies when most other soft fruits are over. Secure the new growths to the wires to avoid damage to them, removing entirely any that are not wanted. They should be loosely tied between the present fruiting canes and as free of the fruit as possible, for if the berries are covered by foliage the flavour will be seriously affected.

Gooseberries.—Where the berries are left to ripen these make a valuable dessert dish which is highly appreciated at the present time, and in the selection of varieties a wide range of flavours is offered. When grown under the protection of wire-netting no difficulty with birds arises, but where covered with tanned netting it is necessary to see that this is well secured, as blackbirds are very eager after the ripe berries and will find the least opening in the nets.

Budding Fruit Trees.—This is an operation which is not carried out to any great extent in private establishments, and for general supplies of trees it is probably best left to the nurseryman who specialises in this branch of propagation. For special varieties, however, it is not unusual to grow a few stocks for budding purposes. When bark and sap are in a responsive condition choose buds from the half-ripened shoots of the current year and insert them by the T method. Have everything in readiness so that the operation may be carried out quickly.

FRUITS UNDER GLASS.

By T. Pateman, Gardener to Sir Charles Nall-Cain Brocket Hall, Hertfordshire.

Melons.—Seeds for raising a late batch of Melons should be sown forthwith. Melons are always in demand in large establishments during the autumn, and provided the plants are not overcropped, the flavour of the fruits will be quite good, especially should the weather be open and bright at the time of ripening. Probably one of the best methods of growing a late batch of Melons is by the cordon system. Grown in this way the plants may be put quite closely together and no more than two fruits cropped to each plant. The bed in which the young plants are to be grown need not be more than about fifteen inches wide and about five inches in depth; it can easily be added to when the fruits have set, when new roots will ramify in the fresh soil. Close the house early in the afternoons with plenty of atmospheric moisture.

Frame Melons.—Where Melons in frames are ripening their fruits, it will be advisable to allow them plenty of air on all favourable occasions; water should be given sparingly to the roots but not so little that the plants will dry off before the fruits are matured, or the flowers will be poor and insipid. Successional Melons growing in frames should be given every attention. In regulating the young growths avoid overcrowding or the fruits will not set freely owing to excessive moisture caused by dense growth. Pinch the shoots at a joint or so beyond the fruits and fertilise the blossom when several flowers are expanded so that the fruits will all form at the same time. Plants that have set their crops should be assisted with liquid manure or some suitable concentrated fertiliser. Close the frame early in the day to conserve the sun-heat and promote plenty of atmospheric moisture, for Melons delight in a high temperature from sun heat.

Fruit Borders.—At the time of writing, the weather is exceedingly hot, and in very hot weather fruit borders must be provided with plenty of moisture. Here, on a gravel subsoil, the borders dry out very quickly and require watering copiously every week to keep the trees in good health. Do not be misled by the surface appearing to be moist, but be sure that the trees or vines are getting a sufficient supply of water by carefully examining the borders.

THE FLOWER GARDEN.

By F. C. Puddle, Gardener to Lord Aberconway, Bodnant, Taly-Cafn, North Wales.

Colchicums.—These autumn-flowering bulbs have now finished their season's growth, and if it is desired to divide the clumps of bulbs or to make new plantings, this should be done immediately, for any delay in carrying out the work will be detrimental to the flower buds. Colchicum byzanticum, C. agrippinum and the several forms of C. autumnale are admirable subjects for the wild garden also for naturalising in grass, but the beautiful C. speciosum and its variety alba are worthy of a sheltered corner in the garden, where their large, handsome flowers will not be injured by autumn storms. Established clumps of Colchicums should not be disturbed unnecessarily.

Crocus—Autumn-flowering species of Crocus such as C. zonatus, C. speciosus, C. sativus and C. Salzmannii, should be planted forthwith. C. speciosus is perhaps the most beautiful and reliable species, and its violet blue flowers are especially charming when it is massed in grass.

Narcissus.—Where choice varieties of Narcissus are grown in beds the bulbs should be lifted and transferred to fresh ground at least every third year. The foliage having died down, the work may be carried out forthwith. No good purpose is served by lifting and storing the bulbs before replanting them, for in nature Narcissi take a very short rest, in fact, they commence to develop new roots so soon after the old foliage has died down, that it is difficult to catch the bulbs really dormant. The bulbs should be planted from three inches to four inches deep, and the distance apart may be varied according to the size of the bulb and the growing strength of the variety.

Hedges.—These useful adjuncts to the flower garden should now receive their annual clipping. A well-grown hedge should be both useful and ornamental, but its chief claim to beauty depends on its symmetrical outline. Yet it is remarkable how many gardeners who would not allow a row of Lettuces to be planted without a line, will set a man to clip a hedge by mere guesswork. It is a very easy matter to keep a hedge really correct in outline by the use of a few laths when clipping. These should be placed at intervals along the hedge and plumbed upright, levelled lines may then be stretched from lath to lath, and with these simple guides the hedge may be clipped in perfect symmetry. If it is desired to clip a hedge with a slight angle inwards towards the top, the lath may be made to the required shape. Yew, Box and Privet hedges may be clipped quite perpendicularly; but hedges of deciduous subjects and Holly will have a better base if they are shaped to a slight slope inwards towards the apex. Laurel hedges should not be clipped with shears as they disfigure the leaves; the shoots may be trimmed to shape by the use of secateurs or a knife.

PLANTS UNDER GLASS.

By JOHN COUTTS, Assistant Curator, Royal Botanic Gardens, Kew.

Clerodendron ugandense.—Cuttings of this blue-flowered species will root at almost any time and now is a suitable date to raise fresh stock for next year. The cuttings will root readily in a case furnished with slight bottom heat. In its subsequent stages this Clerodendron requires only a greenhouse temperature; planted out, it is an excellent subject for covering rafters or pillars, and as it is not of a twining habit, it may be trained in bush form, either planted out or grown in large pots.

Fuchsias.—Large, specimen Fuchsias were at one time very popular for conservatory decoration, but they are seldom seen now, probably because they are of no value for supplying cut blooms. Where it is desired to use them, large Fuchsias may be produced quickly without the trouble of wintering large plants. For this purpose some of the stock should now be partially cut back and placed in a house with a genial temperature of 55° to 60°. They will soon break into fresh growth and produce young shoots during September suitable for use as cuttings. The shoots should be cut off when they are three inches to four inches long and made into cuttings, which will form roots very readily. They should then be placed singly in small pots, afterwards potting them on as they require it. Grow the plants steadily through the winter, and if they are potted on as they require it, they should make fine specimens from six to eight feet in height by the following July or August. The leading shoots should not be pinched but should be kept tied up to a central stake. The side-shoots, however, should be kept pinched up to about six weeks before the plants are required to flower. Fuchsias, when in full growth and well-rooted, enjoy liberal feeding; they are very subject to attacks of white-fly, which must be combatted by fumigating the house in which they are grown with hydrocyanic acid gas, or some other approved remedy. Old plants are very subject to attacks of mealy bug, but with young plants this trouble should not arise. Fuchsias, especially varieties that are naturally of a drooping habit, are excellent for furnishing hanging baskets, for which purpose they are deserving of more general use.

Pelargoniums.—Show and Regal Pelargoniums that were stood out-of-doors after flowering should be cut back during August. Cuttings for the raising of young stock may be secured at this time, and unless large specimens are required, the older plants may be discarded, retaining the required number of younger plants for growing on. When they start into growth they should be turned out of their pots, the old soil shaken from the roots and returned to pots of the same size, or even smaller ones. Afford the roots water very carefully until they are active.

Campanula Vidalii.—This Campanula produces its flowers during August, and is therefore valuable for conservatory decoration, as choice flowering plants are by no means plentiful at that time. This plant may be raised from seeds now, but it is at its best in its third year; therefore, a batch of plants should be raised every year. Its successful cultivation presents no difficulty, as it grows freely in a cool greenhouse, and succeeds in any good potting compost.

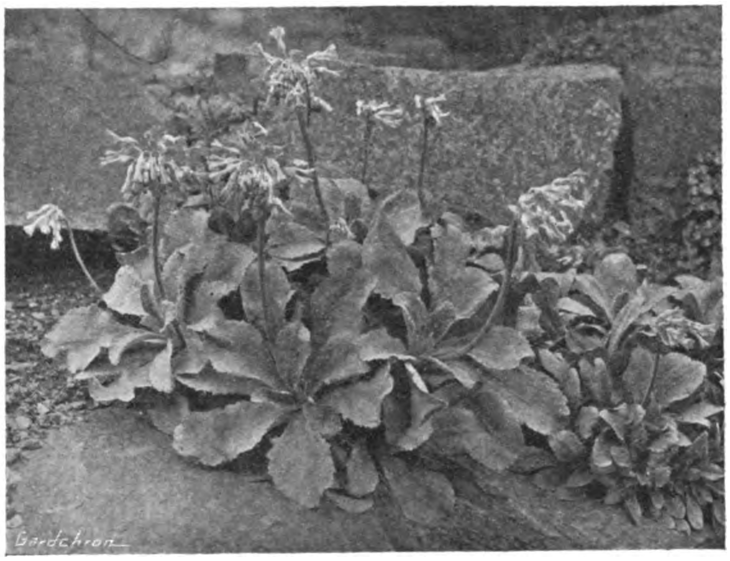

FIG. 48.—PRIMULA PALINURI.

(see p. 87.)

Mignonette.—A liberal sowing of this popular plant should be made during August.

FOR NORTHERN GARDENERS.

By A. T. HARRISON, Gardener to the MARQUIS OF AILSA, Culzean Castle, Maybole, Ayrshire.

Cuttings of Early-flowering Shrubs.—The present is a most suitable time for propagating a variety of the rarer, early-flowering shrubs, as by this time their growths have become partially solidified and capable of withstanding the operation of severing them from the plant without undue wilting; these growths may frequently be removed with a heel, which in most cases forms the surest means of success, but where they are too long for this method, good results may be obtained by severing them with a sharp knife below a node in the usual manner. The cuttings will root best in a shaded frame, preferably with a north exposure, and they may either be inserted in sandy soil direct in the frame, or placed in pots of one variety and the pots plunged to the rims in ashes or other suitable material. Clianthus puniceus and its varieties magnificus and alba root freely from cuttings inserted at this date; also Tricuspidaria lanceolata, many of the Olearias, Clethra arborea, Carpentaria californica, in fact, almost any of these early-flowering gems may be tried now with every prospect of success, and if attended to in the very important matters of watering and shading from the direct rays of the sun should result in well-rooted plants to maintain or add to the owner's collection.

Summer Pruning of Fruit Trees.—The removal of superfluous growths on fruit trees should now be attended to, and in the case of Apples and Pears, these growths may be shortened to the fourth leaf from the base. This is best performed by secateurs, and the careful pruner will cut so closely above the leaf as to show very little, if any, stumps remaining. This point is frequently overlooked by the novice or untrained hand, but to the observant it points out the careful operator, whose mind is set on his work, and who, while performing one important duty, has not overlooked that of neatness. Leading shoots should be left intact, and in the case of Plums and Cherries the young shoots required to furnish fruiting wood for next year should be trained in as nearly as possible to the angle and position they are intended to occupy when the older wood is removed at the winter pruning. These young shoots should not be unduly crowded, but thinned judiciously at this time, as it is most important that their wood is properly ripened by a free exposure to the air and sunshine.

Mulching of Fruit Trees.—This important operation is not so frequently required in districts with a fairly heavy rainfall, but this season, owing to the long-continued dry weather, it should be attended to. In the choice of materials for mulching there is wide scope, and no doubt good, strawy manure, containing a fair proportion of the manurial properties is the best to use, as it not only protects the soil from the rays of the sun, but also feeds the trees at the same time. Where littery manure is not to be had some substitute must be employed; short grass from the lawn mowings makes a fair mulch, settling down closely and retarding evaporation, and the application of the mulch may be repeated at intervals, and spread around the area to be covered with very little trouble. Old potting soil, which may have been used for pricking out bedding plants earlier in the season, is also useful for mulching, and where retained in sufficient quantity could be put to no more useful purpose.

ORCHID NOTES AND GLEANINGS.

COELOGYNE.

MANY species of Coelogyne are of great horticultural merit, although not valued at their true worth. C. cristata, for example, is regarded as a common plant, although a well-flowered specimen is always a picture of loveliness.

Coelogynes are abundant in the valleys of the lower Himalayan zone and are found growing up to 7,000 feet elevation. They are scarcely less common in some parts of the Malay Archipelago, where they are found in moist, shady places on rocks and trees by the sides of streams, at various elevations; hence some species require more heat than others. In some districts in their flowering season, the tree trunks on which they are growing appear as if covered with snow, so profuse and abundantly do they bloom.

Some sixty species are known to science, but I propose to refer to a very few. Coelogyne Mooreana is a most interesting Orchid, and succeeds in a cool temperature; it has been shown in fine condition during the present year by different exhibitors. It is a native of Annam, and was first flowered by Messrs. Sander, the introducers, in 1906, and named after Sir Frederick Moore, V.M.H. It is found wild at some 4,300 feet elevation, and delights in a cool intermediate house temperature at all seasons. If grown in a very warm temperature the foliage becomes spotted and the plant soon declines in health and vigour. The flowers are produced on upright spikes, the white of the petals and sepals, and the numerous yellow, hair-like filaments on the lip make a very striking contrast in tones. The long leaves and scapes are quite different to those of C. cristata, which the flowers somewhat resemble in colour, although not so large in size. This species received a First Class Certificate from the Royal Horticultural Society on December 9, 1906.

Coelogyne pandurata is one of the most remarkable Orchids in cultivation, the unusual colour (green and black) of its large flowers rarely failing to arrest the attention of the beholder. It flowered in this country so far back as 1853, having been discovered in Sarawak the previous year, where it grows in the hottest jungles on the trunks of trees in the swampy, lowlands adjacent to the coast and river banks, places that are almost inaccessible during the rainy season.

C. pandurata, with the others from these hot, damp lowlands, such as C. asperata, C. Cumingii, C. Dayana and many others, should be grown in the hottest division, in partial shade if possible, and kept frequently sprayed whilst in active growth. The supply of water should be regulated according to the weather conditions and the season of the year; the compost, even when the plant is at rest, should never become quite dry. When in full growth and well-rooted the water supply should be ample, and tepid rain water should be used for spraying or syringing the plant. The best place of all, if it can be found, is one where moisture will condense on the foliage. Ordinary fibrous compost will answer the requirements of these plants, and shallow pans are suitable receptacles. Many of the species have a long, travelling rhizome and this must be given ample space to extend.

C. Parishii may best be described as a miniature C. pandurata, although it is quite different in the shape and size of its pseudo-bulbs. It flowers from the top of its pseudo-bulbs, is much smaller in the size of its flowers, and differs in the structure of its labellum from C. pandurata. In colour it is a pale yellowish green, the lip spotted with black. *J. T. B.*

INSECT PESTS OF ORCHIDS.

FROM the earliest days of Orchid growing, insects which attack the plants have been one of the chief troubles of the cultivator. In former times when East Indian species were among the principal Orchids grown, the small brown scale, as it was called, always provided work for the garden assistants, who, in some cases, spent two or three days scraping the brown scales off the leaves of a large specimen of, say, Aërides odoratum, and incidentally disfiguring the plant with scratched lines.

Scales insects on Cattleyas were equally troublesome, and these and other pests were often imported with the plants. For example, some importations of Cattleya Mossiae had at once to be cleansed and the sheaths stripped from the pseudo-bulbs in order to clear the scales from beneath them. Each section of Orchids was infested with its particualr insect, and in dealing with them the syringe or some ineffective, home-made, soapy wash was used, but these measures effected no permanent cure. But steadily, as time went on, the systematic use of safe and sure insecticides kept most collections clean, and the preponderance of clean, home-raised hybrids, now out-number the imported species.

Although the expense of these reliable insecticides is small and the time involved in using them among the most profitable spent of any operation in the Orchid houses, still some growers neglect to adopt them. One case in point may be instanced. An amateur's collection of Orchids contained in six or eight houses was in charge of a grower who was a diligent man, but who relied on hand cleansing and syringing to keep down insect pests. The result was that the insects got the upper hand, and thrips especially abounded, the plants in the Odontoglossum house being beset with several kinds of them and the flowers were ruined. Large specimens of Odontoglossum Edwardii and some otherwise fine Odontoglossums cirrhosum were also badly attacked. These had sent up a goodly number of spikes several years before, but no flowers were produced, the lateral spikes, which should have borne the flowers, being sealed in their bracts by the yellow thrips which abounded. War service caused the grower to leave, and I was asked to engage another. I secured the services of a steady man, who, on seeing the state of things, said he had a similar case before, and frequent spraying with a nicotine insecticide soon put things right. He resorted to the same method in his new appointment, the thrips vanished as if by magic, and long retarded flowers delighted the owner. Careful ventilation of the house with a view to maintaining a low temperature at night also helped to continue the improvement. *James O'Brien.*

EICHHORNIA CRASSIPES (MART), SOLMS.

As an aquatic plant for cultivation in tropical houses, Eichhornia crassipes (frequently spelt Eichornia) has long been valued, although it is now rarely found outside botanic gardens. There are, however, some interesting points in its behaviour which may be worth putting on record.

The plant is a member of the Pontederiaceae, amd was first described and illustrated by Martius [*] in 1824 under the name Pontederia crassipes. In 1843, Kunth transferred it to his new genus Eichhornia, describing it under the name E. speciosa [†]. The generic name commemorates one J. A. F. Eichhorn, a Prussian minister, born in 1779. Subsequently Solms, in 1883, described the species under the name of Eichhornia crassipes [‡], by which it is now correctly known.

The credit for the introduction of this species into cultivation in this country is due to Mr. Aiton, a former curator of the Royal Botanic Botanic Gardens, Kew. He obtained plants from Brazil for Kew, some of which were sent to the Glasgow Botanic Garden, where "they flowered in great perfection in July, 1829, immediately on being removed from a small tub to the large aquarium of a stove." An illustration of the plant was given in *Bot. Mag.*, t. 2,932, under the name of Pontederia azurea. This name was conferred on it in error by Sir W. J. Hooker [*], P. azurea being a distinct species which Kunth had also transferred to his new genus as Eichhornia azurea.[†] This species is correctly illustrated and described in *Bot. Mag.*, t. 6437, under the name of Pontederia azurea.

Further illustrations of Eichhornia crassipes appear in *Gard. Chron.*, vol. xxv. (1886), p. 113, and an accompanying note states that it flowered in the summer of 1885 in the Oxford Botanic Garden. This illustration was reproduced in *L'Illus. Hort.*, 34 (1887), t. 14, where a description of the plant is also given.

Confusion of this species with E. azurea has arisen, partly because the flowers do not keep well when dried, and partly because the vegetative characters of E. crassipes may, in cultivation and under certain conditions, resemble those of E. azurea.

The characteristic feature of E. crassipes is the inflated leaf-stalks. The flowers are pinkish mauve and possess six perianth segments, which are nor serrated, but the upper one is larger and has a blue patch with a yellow centre. The inflorescence is racemose, there being usually about eight flowers arranged in a loose spike.

E. azurea, on the contrary, does not possess inflated leaf-stalks, and the inner perianth segments are beautifully serrated. The flowers are bright pale blue, and hairy on the outside.

In the case of E. crassipes, the flowers last for about twenty-four hours from the time of opening, rarely longer, except in dull weather, when they may exceed this period by an hour or so. At the end of that time the flower stem begins to bend in the middle. The process of bending is comparatively rapid, twelve hours usually sufficing to place the inflorescence below the water level.

Pollenation would appear to be effected before the bending of the stem commences, and to be due to the agency of insects. Furthermore, cross pollenation appears essential. H. Muller records [‡] on the authority of his brother, Fritz, that "Pontederia (Eichhornia) crassipes exists at Blumenau . . . . . . in long-, mid-, and short-styled individuals." while Lovell states [§], in the case of Pontederia cordata, that that species is fertilised by the monotropic bee, Halictoides novae-angliae, or the Pickerelweed bee. He also states that the flowers are visited by many bees, flies and butterflies, while Bombus vagans is credited with as many as seventy visits per minute. These circumstances explain why no seed is obtained from plants in cultivation here.

The root-system of E. speciosa has also attracted some attention, as it produces two kinds. In deep water it is a free, floating perennial, but in shallow water the plant produces anchoring roots in addition, and these appear about flowering time, and they penetrate the soil below. The normal roots are handsome in appearance and of a dark mauve colour.

The cultivation of the plant presents no difficulty. It should be provided with good soil in order that it may receive some nourishment, and accommodated in a shallow tank in a house with a stove temperature. The species reproduces itself quickly by vegetative means, so that offsets offer a ready method of propagation. Owing to the rapidity with which the plant increases, it is advisable to restrict it, but when this is done the consequent crowding results in an increase in the length of the leaf-stalk, so that E. crassipes, under these circumstances, may resemble E. azurea in vegetative characters. Much better results are obtained by wintering young plants instead of old ones. *Robert H. Jeffers.*

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[*] Martius. *Nov. Gen. et Sp. Bras.* 1. 9, tab. 4 (1824).
[†] Kunth. *Enum. Pl.*, iv. 129 (1843).
[‡] Solms. in *D.C. Mon. Phan.* iv., 529 (1883).

[*] *Bot. Mag.*, t. 2932.
[†] Kunth *loc. cit.*, p. 131.
[‡] Muller, H. *Fertilisation of Flowers* (London, 1883), p. 561.
[§] Lovell, J. H. ***The Flower and the Bee***, pp. 105–106 (London, 1920).

BULB GARDEN.

TRITONIA HYALINA.

Mr. E. A. Bowles, who exhibited this very beautiful Tritonia (see Fig. 49) at the R.H.S. meeting on the 13th inst., when it received an Award of Merit, points out that the name is T. hyalina and not T. Lyaline, as was written incorrectly on the entry card.

Mr. Bowles states that the corms were sent to him from South Africa a year ago as a Sparaxis, but they agree best with T. hyalina (see Baker in *Journal of the Linnean Society*, XVI, p. 163=T. fenestrata, Ker-Gawl, also *Botanical Magazine*, t. 704). The hyaline margin of the claw of the perianth segments is the chief character in which it differs from forms of T. crocata. Mr. Bowles also grows the salmon form of T. crocata and believes it is a distinct plant.

T. hyalina flowered in the open border last July and is now in flower again in the open at Myddleton House gardens. Some bulbs potted by Mr. Bowles at the same time as T. crocata forms started much later than the latter and are now just going out of flower. The crocata forms, he states, were over six weeks ago.

BRODIAEA IXIOIDES.

Hardy dwarf, summer-flowering bulbs are not too plentiful, and more use should be made of such as are available. Several of the Brodiaeas are of high value at this time, and among the most reliable of these is Brodiaea ixioides, occasionally still called Calliprora lutea; the genus Calliprora is now merged in Brodiaea. The name Calliprora means "pretty face," and colloquially the plant is known as "Yellow Pretty Face."

While some of the species will not withstand severe or very wet winters, even in light, dry soil, B. ixiodes appears to be much more resistant to the vicissitudes of our climate, and I have grown it for a long series of years in a district which has a high winter rainfall and where several other Brodiaeas have succumbed.

It is a pleasing little plant with attractive yellow flowers, and grows about six inches high. This year it began to flower towards the end of June, and its blooms, which are produced in succession, will last for a considerable time. It was found by Douglas in northern California and was figured in *The Gardeners' Chronicle* in 1896, vol. xx, p. 215. It is procurable in autumn and may be planted about two inches deep. Mrs. Loudon, who figured it in her *Ornamental Bulbous Plants*, recommended peat soil and a shady situation, but it does not require either, as I have grown it in common garden loam and in a sunny situation. Mrs. Loudon's illustration does not do justice to the plant. There is a superior variety named splendens in cultivation and this should be secured, if possible. *S. Arnott.*

ALPINE GARDEN.

PRIMULA PALINURI.

This interesting species was figured in *Bot. Mag.*, so long ago as 1835, t. 3,414, but it has never become common in gardens. This may be due to the flowers being produced in early spring, a season when they are liable to injury by frost, and also to the fact that the plant has occasionally proved difficult to cultivate. It is, however, worth growing for the ample green leaves which persist through the winter, and for the umbels of rich yellow flowers produced in March.

At Glasnevin, several groups have flourished for some years in the rock garden (Fig. 48), where they are planted in a northern aspect in loamy soil and surrounded by stones. As the plants increase in age and size they form a distinct stem, and it seems essential that it, and the leaves, should not rest on the bare soil but on rocks; thus, while the roots have ample moisture at all times the leaves and stem above ground are kept dry, and this is especially desirable in winter.

The leaves, produced in a rosette at the end of the stem, are often nine inches and more in length, proportionately wide, but broadest towards the apex, narrowing towards the base; the margin is toothed except in the lower half of the leaf, which is green and glabrous on both surfaces. The scape rises well above the leaves and bears an umbel of from twelve to twenty flowers; the calyx is mealy, the corolla rich yellow. *J. W. Besant, Glasnevin.*

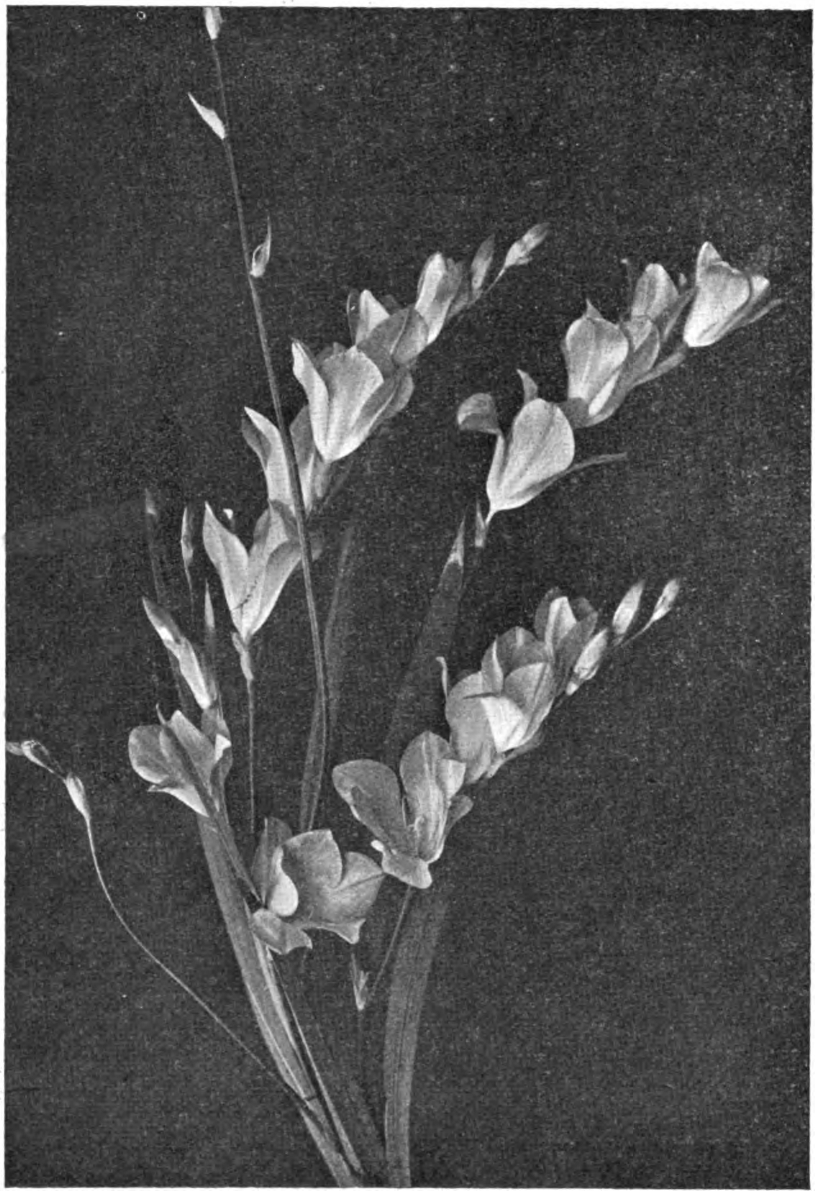

FIG. 49.—TRITONIA HYALINA.

R.H.S. Award of Merit, July 13. Flowers bright salmon-pink. Shown by Mr. E. A. Bowles.

PRIMULA MOOREANA.

This charming hardy Primula is one of a numerous group of allied plants which pass under the name of P. capitata in gardens, all characterised by rounded heads of flowers and neat leaves. Unfortunately, most of them are short-lived, and it is not everyone who has both time and inclination to sow a pinch of seeds annually to maintain a stock.

P. Mooreana is probably entitled to specific rank, as is generally accorded it. It is much longer-lived than the others of the group, and, given a cool place in rich but well-drained soil, will usually survive for several years.

It is a delightful little plant, with charming tufts of leaves and stout stems a few inches high, pleasingly covered with white farina and carrying a rounded head of rich, deep Tyrian blue flowers, which open in succession from the base upwards. The plant is in bloom in my garden in a shaded border.

The late Mr. Farrer, generally a keen critic of the behaviour of rare plants in cultivation, spoke highly of P. Mooreana, and his opinion is endorsed by many growers of plants of this superb genus.

SILENE SAXIFRAGA.

This species is not among the elite of the Silenes, or Catchflies, although it has received high encomium from some critics. It is a most distinct species, there being few in the genus at all resembling it.

I grew Silene Saxifraga for some years on a sunny bank in the rock garden, where it hung over the stones and covered them with its narrow, fresh, grass-like foliage. It flowered fairly well, but as the blooms were of a greenish white with brownish reverse they made no contribution to the colouring of the other alpines.

Left alone, it will form a good-sized plant, producing a number of flowers in succession two to three on long peduncles, and the corolla opens at night only, doubtless to attract insects to be trapped on the sticky stems. The plant grows well on a sunny, dry bank, and blooms in early autumn.

It is found wild in Switzerland at a height of one thousand to eighteen hundred feet. It will grow in ordinary soil; it is a true alpine and does not exceed six inches in height. *S. Arnott.*

ASTRANTIA MINOR.

The Astrantias, or Masterworts, do not figure largely in the average garden, and one may visit scores of places where hardy plants are valued without meeting with even one plant of this small genus of Umbellifers. Some of the larger forms have pinkish blooms, and these are highly pleasing in a border, or they may be used as cut flowers. The bracts are variable in respect of the presence or absence of pink, but even those with this colour absent are attractive with their grey-white and green bracts, and the centre filled in with the elegant flowers.

A. minor, the smaller Masterwort, is a charming little plant, making a tuft of neat leaves, and bearing above these slender stems carrying the quaint-looking inflorescences so characteristic of the genus.

The species is a native of the more wooded parts of the European Alps, and thrives best in a cool, rather moist situation. *S. Arnott.*

HARDY FLOWER BORDER.

SOME BEAUTIFUL HYBRID EREMURI.

A very striking feature in the exhibit of hardy flowers staged by Messrs. W. Artindale and Son, at the Royal Agricultural Show, was a range of lovely hybrid Eremuri. The varying shades of amber, citron and tawny orange in the hybrids clearly betokened the parental influence of Eremurus Bungei.

The race is not remarkable for great size as compared with the himalaicus × robustus hybrids, which flower considerably earlier in the year, but several spikes were fully six feet high, and the manner in which a considerable length of stem is evenly set with simultaneously opening flowers, conduces to imposing effect. One named variety, Sir Arthur Hazlerigg, certainly deserves the distinction of individuality, its colour being a subtle suffusion of rich, glistening guinea-gold, with a shade approaching that of burnished bronze. The unnamed hybrids are, however, without exception, extremely beautiful, and a colony planted where a crescent background of Cupressus or even a Hornbeam hedge exists would be an impressive feature in any garden

There appears to be a prevalent idea that planting Eremuri is a gamble, with the odds heavily against success, but in point of fact there is less likelihood of failure than is generally supposed if a little care is taken in preparing the ground and selecting the site.

Situation is certainly an important point, and with flowers of such majestic mien and exquisite beauty, it is meet that their position be made a matter of careful consideration. Sunshine is essential, and shelter from wind is demanded in consequence of the height and weight of the flower-spikes. So far as soil is concerned, any but the most stubborn, cold, and moisture-holding clay may be made suitable, deep digging, rubble draining, enriching and rendering porous with grit, burnt earth, etc., being quite within the commonplace measures of preparation any competent gardener takes as a matter of course when arranging quarters for permanent subjects, and it is scarcely necessary to mention that Eremuri should be well-planted and thenceforward left undisturbed.

More of the failures I have investigated have been due to deep planting than to any other cause. Eremuri have a reputation for tenderness, and a very general supposition is that the best method of preserving the tender roots from harm is to bury them deeply in the earth. In some cases this supposition is correct, but there is infinite variation in the likes and dislikes of plants, and Eremuri certainly do not like to be buried deeply. Their thick, fleshy roots radiate from the central crown like the rays of a star-fish or the spokes of a wheel, perfectly flat, rigid and brittle, and they need to lie on an even base, embedded in gritty, porous compost, not more than about four or five inches below the surface. Every care should be taken not to break a root thong, for breakage means decay.

The most critical time is just when the rising crowns burst open, for then a sharp frost can penetrate right into the heart of the plant, damaging the embryo flower head. Protection should be afforded at this period, not, as so often has been done, by mounding ashes, leaf-mould, straw or manure upon the crowns, for this is a pernicious and dangerous practice; the proper plan is to cut some Furze boughs, or even Laurel branches and insert these around the plant to make a conical roof over it. The protection should be allowed to remain no longer than is absolutely necessary to ward off sharp frosts, and all will be well.

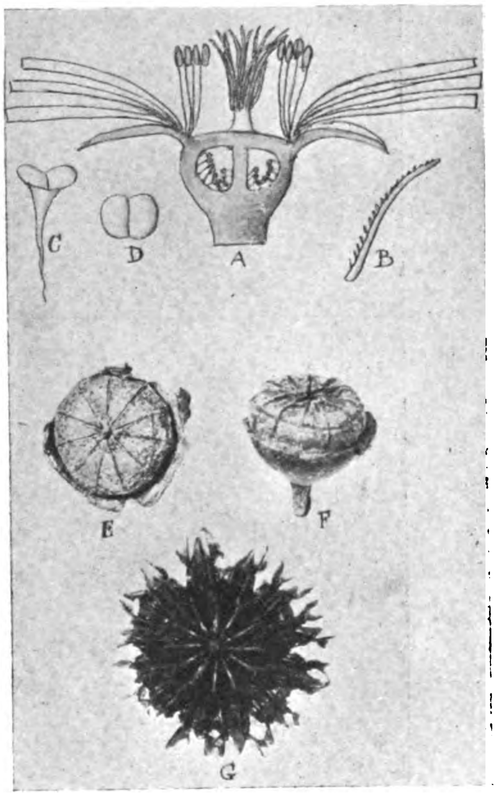

FIG. 50.—PLEISOPILOS BOLUSII.

A, Diagram of flower-structure; B, a stigma; C and D, side and top views of a seedling four days old; E and F, top and side views of a capsule when closed; G, capsule expanded when wetted (see p. 89.)

Feeding should take the form of spring mulchings, supplemented at intervals with liquid manure. *A. J. Macself.*

MORINA.

Morina longifolia and M. persica, the two most generally cultivated species of the genus, are dwarf herbaceous herbs with glossy, spiny foliage, distinctly Thistle-like in appearance. The flowers of M. longifolia are three-quarters-of-an-inch in diameter; they are crowded on long whorled spikes from two feet to three feet long, and change colour with age, from pink to crimson.

M. persica on the contrary retains its colour, a deep shade of pink.

These plants require a deep, light soil and a sheltered position; they may be increased by division of the roots or from seeds sown so soon as they are ripe. *Fred W. Jeffery.*

TREES AND SHRUBS.

OLEARIA INSIGNIS.

This remarkable New Zealand plant, although not quite hardy except in the most favoured parts of this country, is a beautiful and interesting subject for a cold greenhouse, especially when planted out in a border in a mixture of peat, loam and sand, with plenty of drainage, and exposure to full sun. The whole plant is thickly covered with a felt-like covering, grey to light brown, on the undersides of the leaves and slightly so on the upper side. The flowers are two inches across, borne on erect peduncles; the ray florets are white; the disc florets golden-yellow, with the large receptacle thickly covered with felt, with a few small leaflets clasping round its base.

The accompanying illustration (Fig. 52) represents a specimen growing in a border in a cold greenhouse. During the past winter it was on several occasions frozen solid, but took not the slightest harm, which proves that if kept dry overhead and at the roots cold is not the cause of so many failures as some folk imagine.

Being of prostrate growth, a few flat stones should be placed around the plants to prevent the large leaves resting on the earth and decaying from damp. Never spray the plant overhead or the beauty of its felted leaves will be spoiled. *C. F. Wood, The Warren Gardens, Hayes, Kent.*

A NEW RACE OF HARDY AZALEA.

In the autumn of the present year, a new strain of hardy Azaleas will be placed in commerce by the well-known firm of Georg Arends, of Ronsdorf, Germany. Azaleas already exist which will withstand the winter, but these are of the mollis and pontica kinds, and the new strain, while producing foliage like that of A. indica, which remains green during the winter, will bear flowers like those of Indian Azaleas.

The blooms are not quite so large or cover quite the same range of colours as the type, but that is simply a matter of time. In any case, these new hardy Azaleas mark a considerable advance in hybridisation. They originated in the Japanese sorts Hinodigiri, Hatsugiri and others, which are hardy, and are remarkable for their great floriferousness: the Ronsdorf hybrids however, have considerably larger flowers, nearly as large as those of the indica type.

Herr Arends has been engaged for nearly fifteen years in the hybridisation of Azaleas. He lately celebrated his fiftieth birthday, and as it coincided with his twenty-fifth year at Ronsdorf, the local members of his society got up a little festival in his honour, of which the chief feature was a procession of young girls dressed to represent Azaleas of his raising, and bringing greetings and good wishes.

POLYGALA CHAMAEBUXUS ANGUSTIFOLIA.

This Polygala is a new-comer to this garden. What its origin is I cannot state, but it is very distinct and pretty and the shrubby Milkworts are such charming plants that one welcomes this little stranger. I use the adjective advisedly for P. C. angustifolia is the smallest member of the family that I am acquainted with; it does not appear to grow much more than an inch in height.

The plant is very compact in habit, the leaves are narrower and shorter even than those of P. Vayredae, and the flowers, if smaller also, are an equally vivid shade of crimson and yellow.

For the small rock-garden, or any close-up position, this Polygala should become popular among the dwarfest-flowering shrubs. It has a reputation for having a blooming season as long as that of the other forms of P. Chamaebuxus. *A. T. Johnson, Talycafn, North Wales.*

MESEMBRYANTHEMUM.

(continued from page 73.)

9. PLEISOPILOS, N.E. Br.

Very dwarf, stemless, succulent perennials; leaves opposite, normally 2 (or when making a new pair 4) to each plant or growth, equal, ovate, very stout and thick, as broad as long, or less than twice as long as broad; firm, grey-green or brownish, conspicuously dotted. Flowers solitary or 2–4 to a growth, terminal between the leaves, sessile, bracteate. Calyx 5–6-lobed nearly or quite down to its union with the ovary. Petals numerous, free, linear, arising around the margins of the top of the ovary. Stamens numerous, erect. Stigmas 9–14, filiform; no style. Ovary inferior, 9–14-celled; placentas down the centre of the outer wall of the cells and extending a short distance up the central axis. Capsule subhemispheric, with 9–14 valves and cells; valves reflexed when wetted, each with a pair of parallel, expanding keels adnate up to the middle of the valve, then free, and the free part bearing a triangular, membranous wing, these wings unite with the wings of adjacent valves in pairs or become free and stand erect between the valves; cells acutely roofed by the rather rigid cell-wings or seperated elements of the cell-partitions, turned back at the opening and somewhat resembling the mouth of a trumpet, so that the whole series of roofs are raised into a sort of crown-like structure above the level of the expanding-keels, without tubercles at the mouths of the cells. Seeds compressed-ovoid with a nipple at one end, microscopically tuberculated, dark brown.

Species 2, natives of the eastern Karoo Region of South Africa. The type of the genus is P. Bolusii, N. E. Br.

The name is derived from the Greek, *pleios*, full, and *spilos*, a dot or spot, in allusion to the conspicuously dotted leaves. Owing to a shaky hand from old age, my diagram of the structure of this genus (as well as of other genera) is not very good, but is sufficiently correct in detail to show—in conjunction with that of the capsule and the vegetative organs—how it differs from other genera.

KEY TO THE SPECIES.

Flat surface of the leaves not longer than broad and not acute at the apex, and the apical part of the leaves often an inch or more thick. 1. **Bolusii**

Flat surface of the leaves longer than broad and acute at the apex, and the apical part of the leaves usually less than an inch thick. 2. **simulans.**

1. **P. Bolusii, N. E. Br.** (Figs. 50, 51).—Leaves slightly spreading, with their flat faces 1-2 inches long and as much or more in breadth, very broadly ovate in outline, obtusely pointed, the apical part of the leaves 1–2 inches thick, half-egg-shaped at that part in transverse section; surface slightly uneven from slight irregular bumps and depressions, glabrous, grey-green, often tinted brownish, thickly covered everywhere with conspicuous dark green dots. Flowers sessile, terminal, solitary or 2–3 together, bracteate. Calyx 5–6-lobed; lobes about 5 lines long, ovate, obtuse. Corolla 2 inches or more in diameter. expanding in the afternoon and closing in the evening for several days in succession; strongly scented, something like Cocoanut; petals 9–10 lines long, ¼-⅓ line broad, cuneately linear, obtuse, bright yellow fading to white at the base, paler on the back. Stamens very numerous, erect; filaments whitish, anthers deep yellow. Stigmas 9–11, ascending, finally rather longer than the stamens, seated on a stout conically-cylindric projection from the top of the ovary, which is 9–11-celled. Placentation and capsule as described for the genus.

Mesembryanthemum Bolusii, Hook. f. in *Bot. Mag.*, t. 6664 (1882); Dyer in *Ann. of Bot.*, v. XX, p. 125, t. 8: Marloth *Fl. of S. Afr.*, v. I. p. 206, t. 51; Berger, *Mesemb.* p. 275, f. 60, 61, and in *Monatsschr. f. Kakt.* v. IX, p. 39, with fig.; *Zeitschr. f. Sukkul.*, vol. II, p. 159; Rehnelt in *Gartenwelt*, v. XI, p. 302, with fig.

Graaff Reinet Division: Near Graaff Reinet, Bolus! near Kendrew, Frith! Aberdeen Division: Near Aberdeen Road, Marloth.

2. **P. simulans, N. E. Br.** Leaves widely spreading, 2–3 inches long, 1¼-2¼ inches broad and ½-¾ (rarely up to 1) inch thick near the apex, ovate, acute, flat on the face, compressed-keeled on the back at the apical part; surface smooth, glabrous, grey-green or more or less tinted with brownish, thickly covered everywhere with dark green or dusky dots, the young leaves slightly glaucous. Flowers solitary or 2–3 together, terminal, sessile or nearly so, bracteate. Bracts ¼-½ inch long, ovate, acute, keeled, glaucous. Calyx 5–6-lobed; lobes 5–6 lines long and 3–5 lines broad, ovate or ovate-lanceolate, subacute or obtuse, the inner with membranous margins, glaucous-green with a slight reddish or purplish tinge, dotted with dark green. Corolla at first 1½-2¼ inches in diameter, enlarging day by day to 2¼-3 inches in diameter, opening between 3 and 4 p.m., and closing between 6 and 7 p.m., irrespective of sunshine or cloud if the temperature is not below 70° Fahr., lasting 10–12 days, strongly scented, somewhat like Cocoanut; petals very numerous (over 150), in 4–5 series, spreading in different planes, the outer recurved, 9–13 lines long, ½-¾ line broad, linear, acute or obtuse, entirely bright yellow or with the basal part white on the inner surface, whitish or pale pinkish on the back, scarcely shining. Stamens very numerous; filaments white; anthers orange-yellow. Stigmas 10-12, as long as or longer than the stamens, filiform, yellow, at first erect and closely placed in a bundle, afterwards separating, spreading and more or less curled at the tips.

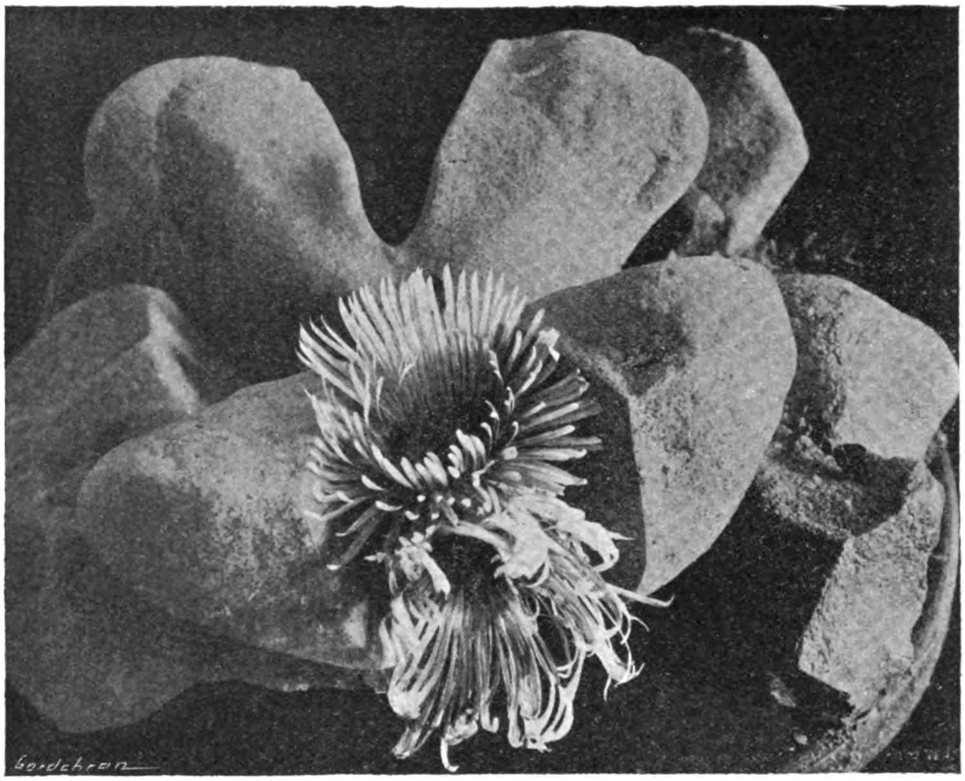

FIG. 51.—PLEISOPILOS BOLUSII

Five-sixths natural size.

Mesembryanthemum simulans, Marloth in *Trans. S. Afr. Phil. Soc.*, 1907, v. XVIII, p. 43, t. 5, f. 7, and *Fl. of S. Afr.* v. I, p. 206, f. 94; Berger, *Mesemb.*, p. 278, f. 62; N. E. Br. in *The Gardeners' Chronicle*, 1921, v. LXX, p. 223, f. 94; *Zeitschr f. Sukkul.*, v. II, p. 156, with fig.

Aberdeen Division: Near Aberdeen Road, Marloth! Frith!

The above two species, when growing under natural conditions, are said to closely simulate the stones they grow among, so that when out of flower may easily be overlooked at a little distance away from them, but when in bloom their large, bright yellow flowers would render them very conspicuous. Yet, in spite of this simulation of their surroundings, I am informed by Dr. Marloth and others that these plants are searched for and eaten by goats and other animals, and in some parts are becoming gradually exterminated by them.

The flowers of both species expand very regularly between 3.30 and 4 p.m., and close between 6 and 6.30 p.m., at the end of August or beginning of September, or sometimes later in the year, according to the nature of the summer and the watering they have received. Their flowers expand independently of sunshine, as I find that they will open in dull, sunless weather if the temperature is sufficient and not much below 70° Fahr. They are strongly and pleasantly scented with an odour that reminds one of that of the fluid in a Cocoanut. And, like the flowers of other genera of this group of plants, they enlarge considerably while maturing their stamens and stigmas, the final diameter of the flower being usually about an inch larger than that of its first day of opening. During the first 4 or 5 days the stigmas remain closed together in a column, but elongate during this period; meanwhile the anthers shed their pollen, and then the stigmas separate and become receptive. *N. E. Brown.*

(To be continued.)

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CLASSICAL AND LEGENDARY GARDENS.

IX.—Early Hebrew Garden-Lore.

OF legendary Hebrew gardens we have already treated when describing the Garden of Eden.[*] The last paper brought us midway between the purely legendary and the historical or classical, and we may now proceed to summarise our knowledge of the latter. In so doing we shall learn that while the Jews had their own native words for garden, vineyard and the like, they borrowed from their neighbours the term for pleasure ground, park or orchard. And while they had many indigenous flowers, fruits, herbs, shrubs and trees for beauty and ornament, as well as for use, they introduced many others in the days of commercial prosperity and after their years of exile. The literature of Hebrew gardens, too, is somewhat extensive, since we have not only the Scriptures, the Apocryphal writings, the large collection of works known as pseudo-epigraphical, the parables and similes cf the Rabbis, but also the words in use, the tarjums, commentaries, and annotations of generations of diligent students, who by reason of their reverence for the Holy Writings, lavished on the Hebrew Bible their utmost care and devotion.

It is always gratifying to the student to meet with undesigned coincidences, or such light on his subject as may be met with in works which have been written for a totally different purpose. So the historian of the old-time garden finds pleasure in the perusal of historical literature, works of travel, ancient journals and diaries, romances, plays, novels and poems, because they frequently alluded to gardens or plants, to flowers and fruits and horticulture in a casual way, thus showing that these things were familiar at the time of writing. Let us take by way of illustration such a sidelight on early Hebrew gardens from an Egyptian source. About 1,300 years before Christ, many years, therefore, before the reign of Solomon, we find a papyrus purporting to record the travels of a Mohar, or a collection of letters written by an Egyptian scholar belonging to the Court of Rameses II. In this interesting work the author shows great anxiety to display his knowledge of Palestine and its geography. Dr. Brugsch has given us a rendering from which the following passage bearing on our subject may be quoted, with certain modifications.

> "Thou comest to Joppa (famous from early times for its groves and gardens); thou findest the garden with the date palm in full bloom in its time. Thou enterest the garden in order to eat. Thou findest that the maid who keeps the garden is fair (cp. *Song of Songs*, 1, 6, 'They made me keeper of the vineyards'). Thou art recognised: thou art brought to trial. Thou sleepest a deep sleep, for thou art weary."

While he thus slept his arms were stolen from his side, and his chariot stripped of its valuables—a very exact picture of life in every land and age. There are many things to show that, not at Jaffa merely, or at its rival city of Sidon, but throughout Syria gardening has long been a favourite pursuit. We may take, for example, the special words in use, the mechanism employed in cultivating and watering, the Bible and other early records, and other sources of information. Thus, the technical name for a watered garden is *biarch*, which is quite distinct from the ordinary word for a cultivated enclosure, and shows that irrigation has long been in use. The Persian water wheel, also, as distinguished from the *shaduf*, suggests what we already know to be a fact, that during the Persian rule Palestine was planted with parks, paradises and gardens.

In *Nehemiah* II, 8, we read of the Park (*Pardés* or *Paradise*) which belonged to the Persian King, from which timber was supplied for rebuilding the palace gates and the house of the King's representative in Jerusalem. This was quite distinct from the King's garden, to which reference was made in our last. What the trees were which the people cultivated we learn a little later (viii, 15), where mention is made of Olive branches and branches of Pine, Myrtle branches, Palm leaves and branches of thick trees, such as could be used for making booths; while further on (ix. 25) the historian, referring to the time when the Israelites entered Canaan, states, "They took strong cities and a fat land, and possessed houses full of all goods, wells (or cisterns) digged, vineyards and oliveyards and fruit trees (or trees of food) in abundance." The Grapes of Eshcol, as we remember, were very famous at this time, and one has only to study the various Hebrew words for Figs to see how intimate the people were with them in every stage of development. The people who dwelt in the country during the long period which elapsed between the days of Joseph and Moses must have been good gardeners and vine-growers, since the Bible narrative shows that the Hebrews on entering Canaan found it full of vineyards and oliveyards which they had not planted, and possessed themselves of all manner of fruit trees and other plants which had been the objects of special care on the part of the inhabitants.

There are many allusions to the well-watered garden in Hebrew literature, and it was frequently employed as a figure of speech to set forth domestic and spiritual prosperity. In some places, as for example, Jaffa, the extensive and profitable gardens are due to the fact that water to any amount can be procured at a very moderate depth. Indeed, it has been stated that the entire plain seems to cover a river of vast breadth, percolating through the sand on its way to the sea, and this inexhaustible source of wealth underlies the whole territory of the Philistines down to Gaza at least, and probably much further south.

Though the regular Semitic word for a garden was *Gan*, variously modified in the different tongues, the words Carmel and Cerem were also used, and hence it is that we find the name Carmel employed as a synonym for abundance or fertility. Reference to a few of the passages where these words occur will show how familiar the Jews were with the garden and grove, the orchard and vineyard. Thus Sennacherib proposes to invade Syria, cut down the Cedar and Fir, and then enter into the territory of Hezekiah, even into the forests of his Carmel, or as the margin and revised version read, "the forest of his fruitful field" (2 *Kings*, xix, 23), implying a park as opposed to the desert. "Lebanon shall be turned into a fruitful field (Carmel), and the fruitful field (orchard or Carmel) shall be counted for a forest" (*Isa.* 29, 17). So Carmel came to be used as a proper name, and was the epithet applied to a fruitful park-like promontory on the Mediterranean, on the south-west border of the tribe of Asher, beautiful in forests and flowers. The word Cerem, from which Carmel is derived, is sometimes translated (as in *Judges* 15, 5) by oliveyard, and at others by vineyard. "Ye have planted pleasant vineyards," says the prophet Amos (v, II), "but ye shall not drink the wine thereof."

Thus we have in the Old Testament the word Gan, a garden; Cerem and its derivative Carmel, an orchard, vineyard or oliveyard, and Pardés, a park or pleasure ground. The word Gan is the one which is used most frequently, occurring at least eight times in the Song of Songs alone. It is still used in the New Hebrew and Yiddish, and in other Semitic tongues. In Palestine, to-day, however, other terms, such as *biarah* are employed. Gardens were formerly often outside the city walls as a matter of necessity. In times of invasion it was important that the people should be protected. Hence the cities were walled, and for the sake of economy the enclosure was often limited in extent. Into the details, however, I have not space to enter here; I therefore reserve these for a later study. In Babylon, as we learn from many sources, the gardens were within the city walls, while in ancient Jerusalem only those which existed from the time of the Jebusites, and were therefore already in existence when the Jews conquered the Holy City, were allowed under cultivation. *Hilderic Friend.*

GARDEN NOTES FROM SOUTH-WEST SCOTLAND.

THE genus Rhododendron holds high festival from February onward to the end of May, the lustre of the earlier-flowering species gaining much from contrast with a more or less bleak environment. By the beginning of June, not only has the eye been sated by the lavish display on innumerable hybrid Rhododendrons, but there is a wealth of Roses and other summer flowers to divert attention from the few natural species of Rhododendron that flower so late.

Among those from China, it is well worth waiting for the white or rose-tinted trusses which R. discolor withholds till June is far spent, for they are finer than those borne by its near relative, R. Fortunei, and equally fragrant.

Of R. auriculatum I can as yet speak only from hearsay, but those who have grown it to flowering size report enthusiastically about its charm. R. crassum, a choice member of the Maddeni series, made promise of a great display at midsummer, but that grievous frost on May 14 and 15 killed all its flower-buds and we have not had one of its deliciously perfumed blossoms.

The beginning of July found R. micranthum loaded with hundreds of compact trusses of small white flowers, less like those of Rhododendron than of a Ledum. It is a hardy, vigorous shrub, but one does not set great store by it, as it flowers at a time when there is so much other white blossom on Philadelphus, Olearia, Spiraea, Cistus, Leptospermum, and numerous other well-known shrubs.

Botanists do not agree as to whether R. eximium is a distinct species or merely a mountain form of R. Falconeri. Mr. Bean in ***Trees and Shrubs Hardy in the British Isles*** describes it as a variety, but in the same paragraph he speaks of hybrids raised between it and R. Falconeri. Anyhow, it is among the choicest of the genus, and claims special notice in late summer; for although, like R. Falconeri, it flowers in April, it is not till after midsummer that its growth-buds give any sign of moving. Starting about the end of June, they shoot forth like great tawny gauntlets, and, retaining the indumentum on both surfaces of the leaf till Christmas, this fine shrub is, over a very long period, almost as attractive as when in flower.

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[*] Vide *The Gardeners' Chronicle*, March 27, pp. 233-4

Nearly two hundred years have passed since Rhododendron maximum was introduced from North America, and it is difficult to account for the neglect into which it has been allowed to fall, for it is well worth growing in woodland by reason of the fine show it makes at and after midsummer, ten to fourteen feet high, crowded with pink or white flowers, with green or yellow spots on the upper limb of the corolla. The so-called Swamp Honeysuckle, R. viscosum, is one of the Azalea group. It was introduced to this country so long ago as 1734, and never fails to delight us with its fragrant white, pink or pink-and-white flowers in July.

The yellow Foxglove, Digitalis ambigua, is much inferior in stature to our native species, and its blossoms are not of a very effective yellow, yet it is worth establishing where our native biennial Foxgloves grow, because of the hybrid forms which arise between them and spring self-sown in the borders. D. ambigua is a true perennial; but the hybrids, bearing flowers varying in colour from pink to rich apricot, are no more than biennial and unluckily are sterile.

Hardy species of Arum are not in favour with those who have sensitive nostrils, and it must be owned that the stench discharged from some of them is overpowering and far-spreading. Yet they comprise a most interesting race, and I confess to much affection for the Dragon Flower—Arum Dracunculus—because of its rich colouring, and of the Dragon's Mouth—Arum (Helicodoceros) crinitum—because of its weird ugliness.

Both these species of Arum are native of southern Europe (I believe A. crinitum is only found in Corsica); yet both are perfectly hardy and flower freely in our chillier climate. A clump of A. crinitum has occupied the same position here for more than twenty years, and presented lately an extraordinary appearance with six long, rough, black spadices lolling in as many gaping spathes nearly a foot long. The discharge of the fetid odour, exactly like that of carrion, is intermittent in both of these species. I have not been able to fix their time-table; but while the smell is very strong in the morning, at other times of the day the flowers are quite scentless.

We hear and read a good deal about colour schemes in the herbaceous border; I own that they leave me cold, for I think informality and accident contribute much to the charm of any arrangement. Elaborate preparation for a blue border or one of any other colour tends to a revival of bedding out, which we were all so glad to get rid of in private gardens. Nevertheless, it is useful to note any pleasing chance combination, such as just now claimed my attention. It is a group consisting of sky-blue Delphinium, pale yellow Oenothera Lamarckiana, scarlet Lychnis chalcedonica, rich yellow Centaurea macrocephala, and, in front, a pale, grey-blue variety of Campanula carpatica. The colour effect is enhanced by a mass of dark olive-green Olearia nummularifolia as a background.

I found lately some plants labelled Aethiopappus pulcherrima, which I must have picked up in some nursery, but I forget which. Neither in the *Kew Hand List* nor in any other book at hand could I find the name Aethiopappus and it entailed a search in the library of the Edinburgh Botanic Garden to teach me that it is an obsolete synonym for Centaurea. I mention this because Centaurea pulcherrima seems to be a scarce plant, justifying its specific name by its delicate flowers of silvery pink and glaucous foliage. It grows about a foot or fifteen inches high. *Herbert Maxwell, Monreith, Wigtonshire.*

NOTES FROM EDINBURGH.

THE recent heavy rains accompanied by a severe thunderstorm on July 9 have given a welcome supply of moisture to light soils. To those plants with a fibrous root system, and particularly herbaceous plants, this has been most beneficial after a spell of comparatively dry weather.

Herbaceous plants have grown remarkably well this season and are now giving a good show of bloom. For colour, July claims the predominant "blues," just as the "yellows" are a feature of the autumn. Delphiniums are now at their best, and such beautiful varieties as Queen Mary, Professor Coleman, Lord Curzon, La Vanda, and many others of brilliant hue, are never wanting of admirers. Two uncommon species which are worthy of special mention as subjects for the border are D. tatsienense and D. likiangense. The former is from eighteen inches to two feet high, with numerous blue-coloured flowers borne freely on stems which rise well above the basal leaves. This Chinese species is quite hardy and easily raised from seeds sown in spring. D. likiangense, also a dwarf species, is found growing in open stony ground with plenty of moisture at the roots. Very compact, free-flowering, and of a lovely pale blue colour, this plant, when grown *en masse*, makes a wonderful display. From seeds sown in spring and seedlings pricked off the same season good plants may be obtained for planting out in the border or bed the following season.

Salvia Evansiana, although dense and heavy of foliage, makes a very good decorative plant. It requires plenty of space as it is a robust grower. Numerous spikes, two feet long, bearing beautiful, large, violet-blue flowers, with white under-lips, rise above the dark green leaves and give it a foremost place among the many members of the Labiatae family.

Although an old plant in cultivation, much attention is given to Morina longifolia. Its unique Thistle-like leaves and spikes, three feet long, of whorled pink and white flowers, make it an admirable plant for effect. No trouble is experienced in the raising of this species, and each year established plants produce abundance of good seeds. Having tap roots and being impatient of shifting, success may be attained by mossing the roots of young plants, which is an advantage should transplanting be necessary.

Astilbe koreana has produced some wonderful white, feathery inflorescences, and as the flowers get older they seem to acquire a slight tinge of blue. It is a handsome addition to the genus, and, growing in a moist situation, few comments are necessary except in its favour. This plant is also raised from seeds which it freely produces each year.

A very attractive group of Lilium Willmottiae

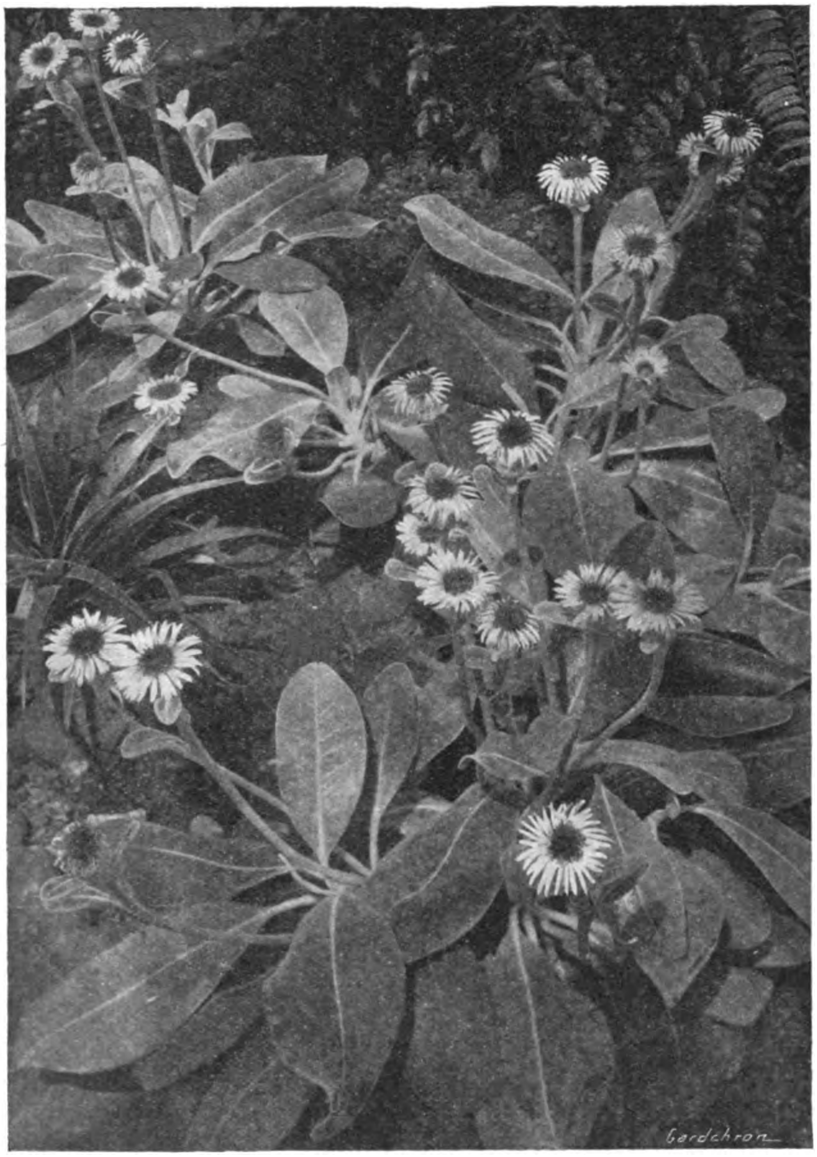


FIG. 52.—OLEARIA INSIGNIS.
(see p. 88)

has commenced to flower, and although at present the bright, orange, basal flowers on the stems only are fully open, from twenty-five to thirty flowers on a spike will ultimately expand and make one of the most showy displays in the garden. It is a native of China and an exceedingly useful plant for every garden. Seeds sown in the usual way in spring and the seedlings pricked off into frames in good compost will produce flower plants the third year.

Numerous good specimens, nine feet to ten feet high, of Lilium giganteum are flowering in a sheltered spot in the wild garden. The large white, fragrant flowers, tinged with green on the outside, are very gracefully disposed on straight erect, stout stems. An additional pleasing effect is given to this nook in the wood by groups of flowering Meconopsis Wallichii, seven to eight feet high, mixed with and surrounding Lilium giganteum. M. Wallichii is truly a woodland plant, and is at home where leaf-soil and humus are abundant. Young plants are now being placed in their permanent quarters to furnish a succession of this tall, biennial, blue Poppy.

A thickly-planted bed of an old favourite North American plant, Zygadenus glaucus (elegans), deserves mention for its show of whitish-green Liliaceous flowers on graceful loose spikes, two to three feet high. It has grass-like foliage and is to be recommended as a showy flowering plant, useful for cutting and garden decoration.

Among other beautiful shrubs from China, Buddleia alternifolia takes a most prominent place, and might be termed the best in the genus. A well-established plant in a sunny position has furnished large numbers of beautiful racemes, two feet long, of violet-coloured flowers in clusters. It is a handsome shrub and should be included in every collection.

In a sheltered corner of the rock garden the well-named Philesia buxifolia has developed many good Lapageria-like flowers of a rosy-red colour. This plant is a slow grower and loves a peaty soil. Here it is quite hardy and never fails to flower. It is a native of Chile. *A. McCutcheon.*

NOTES FROM A WELSH GARDEN.

Among what one may call the mid-season Gentians, G. Purdomii is distinctly attractive. Somewhat after the style of G. Przewalskii, but freer and choicer, its eight to nine-inch, almost prostrate flower-stalks, bear their large, rich, sapphire blossoms from early July onwards for several weeks. This species does well in ordinary loam with a little leaf-mould on a raised border near the water, the lower and damper ground being occupied by several lusty colonies of G. septemfida and G. lagodechiana, which had done so well before being transferred to this cooler soil. Here that strange little plant, Astilbe crispa, with its bronzy, deeply-cut leaves and short, stubby pyramids of creamy blossoms, has been in flower for a long time, it being always one of the earliest of the herbaceous members of its race. The whole plant which, when in flower, does nct exceed about four inches, is extremely hard, crisp and thick-set.

Also in cool soil and part shade is Galax aphylla, whose large, glossy leaves and milk-white spires of blossom are always effective, the former assuming bright tints of gold and bronze towards the late summer, which are maintained almost throughout the winter. Under very similar conditions, the double forms of our two native Meadowsweets, Spiraea Filipendula and S. umbrosa, are not less charming, and a vast improvement, from a gardener's point of view, on the single type. These, with the pale golden-yellow Kniphophia Goldelse, some masses of the old Spiderworts (Tradescantia) the elegant plumes of Cimicifugas, yellow Foxgloves, Symphytum bohemicum with flowers of a vivid ruby-crimson, Ornithogalum pyramidale and some of the Borages together make an informal grouping of much charm.

This has been an unusually good season for Californian shrubs. Fremontia californica has been literally loaded with its big, orange-yellow blossoms for at least two months. Dendromecon rigidum, which opened the first of its Buttercup-yellow flowers at the end of May, will continue until late autumn; Carpenteria californica is larger in bloom and more prolific than I have seen it for a long while, and what remains of Diplacus glutinosus is equally good. Many bushes of the latter were destroyed by frost last winter, the only Californian shrubs which were in any way affected. Though Romneya Coulteri was late in starting, and had many of its basal shoots nipped by the May frost, it is now (mid-July) six feet high, as much through, and promising a fine display of its wonderful blooms.

Sophora tetraptera grandiflora, which flowered in early May and which hitherto has never set seed in this garden, is now bearing several clusters of its curious "neck-lace" pods. Diostea juncea has been in bloom for some time; Hedysarum multijugum makes a striking mass of colour trailing over a retaining wall above which it is planted, and notable among the Leptospermums, in addition to those referred to in a recent note, are L. laevigatum and L. stellulata, both of which have been wreathed with their pretty little white, dark-eyed flowers for some weeks.

Teucrium fruticans is singularly effective in an open part of the woodland, its sky-blue flowers seen against the yellow of a bank of Spartium junceum. Escallonia langleyensis is also here, and this fine hybrid at its best has very few rivals in its genus, especially taking vigour and elegance of growth into consideration. Though they are always reliable bloomers, the taller shrubby Hypericums are uncommonly good this summer. H. patulum, with its variety Henryi, and several allied kinds, are so singularly beautiful, both in the open and under tall woodland trees, that one wonders why they are not more often seen in gardens. H. olympicum var. citrinum is a member of this genus, which is not only distinctly desirable as a July-August-flowering subject grouped in any dry, sunny spot at the front of the border, or in the rock garden, but is quite unlike the typical species. Whilst the latter makes a bunchy, flopping mass of six to eight inches of its glaucous leaves and very large golden yellow flowers, the variety citrinum grows upright to twelve inches, or even fifteen inches, the leaves are bigger and still more glaucous, and the pale ivory-yellow blooms which terminate the slender growths are even larger than those of the type. In passing, I may put in a word of commendation on behalf of H. reptans, which, among the bright green, perfectly prostrate St. John's Worts is still, I think, without a peer for any broad rock face or easy slope of gritty soil. The size of the golden flowers, the bright crimson markings of the opening buds and the peculiarly pleasing verdure of its foliage are a combination which never fails to arrest admiration.

Geranium anemonaefolium has been in full flower since midsummer and will continue until autumn, the oldest plants, some two feet high and four feet across, carrying an abundant yield of the handsome rose-carmine, ruby-eyed flowers. Last winter several of the adult specimens of this superb Geranium were killed, this never having previously happened here. But even after such a severe trial several seedlings have appeared. G. refractum and G. asphodeloides, both with rose-pink flowers, have been blooming since early summer, and before these lines are in print, the trailing G. Wallichianum var. E. C. Buxton, with Nemophila-blue flowers, will be in full blossom. This is probably the best of all the later Geraniums, and it is one that appreciates rather cool quarters and some shade.

While Lilium regale has been exceptionally good, L. candidum has been a complete failure this summer, not only in this garden but in others in the locality where it invariably succeeds. Among the Inulas of a mixed border, I. Roylei stands out as a species of supreme merit. Its large and crinkly leaves are handsome, the huge golden suns remarkably showy, and the plant does not flop about, nor does it run underground to any extent, as some of its kind are apt to do too freely. Lobelia Tupa is also a noble herbaceous perennial, its grey-green, downy, Foxglove-like leaves, with a red mid-rib, and its stately, branching growths rising to five feet to six feet and terminating in spikes of brick-red flowers. Rivalling this stalwart in height is Thalictrum dipterocarpum and others of its elegant race, and there are half-a-dozen three-feet, spiny pillars of green adorned with their quaint pink and white tubular flowers standing above the Acanthoid foliage of Morina longifolia, a very old-time plant, with a perfume of pot-pourri. Not far removed from this is a group of Lychnis Haageana indicating in no uncertain way the value of this hybrid where a bold display of striking colour is desired. This Lychnis appears in various shades, not all of these being desirable, but when the plants are well-grown, well-placed and the very large flowers a royal scarlet, nothing more pleasing could be desired. In conjunction with the scarlet, a group of the pure white can be very satisfying. This Lychnis is quite permanent here, even in a soil that is on the cool side and rather wet in winter, but slugs have to be guarded against in spring. *A. T. Johnson, Ro Wen, N. Wales.*

A TRAVELLER'S OBSERVATIONS.

MOANALUA ESTATE AND GARDENS, HONOLULU.

I was told it was Kamehameha the Second who was the originator of the Hawaiien land laws: he it was who divided certain lands among his chiefs and their retainers: the area allotted to a chief was often quite large and was held in fee simple. The allotment was called an Aahupuaa. Moanalua is such an Aahupuaa, and was left to the late S. M. Damon by a chieftainess, Berenice Pauahi, who was the last of her line. Moanalua has an area of some nine thousand acres.

The late Mr. Damon wanted to make of Moanalua a thing of beauty as well as an economic proposition, and a good deal of his energy was directed to that purpose in the course of a long life; he died two years ago, at the age of seventy-eight.

He developed his estate from a simple cattle range, running from the sea to the mountain top, into a farm and a garden. He dug artesian wells which deliver one million gallons of water per day to irrigate Rice and Sugar lands, and for garden and domestic purposes. These wells are about three hundred feet deep.

At the present time the acreage of Moanalua is divided roughly as follows: forest, 2,300 acres; pasture, 3,500 acres; Pineapples, 400 acres; Sugar cane, 2,000 acres; fish ponds, 441 acres; Rice and Bananas, 116 acres; garden, 40 acres; golf course, 76 acres.

The garden is run somewhat on the same lines as a garden in the Old Country. Some plants are grown under glass, but more for the conservation of moisture than heat. The temperature of Honolulu ranges from about 70° to 85°. Palms are grown under glass for decoration, but most of the species do well out of doors. Orchids are largely grown, the Damon family being very fond of these flowers; Cattleyas and Laelias do well, as do many of the Dendrobiums, Phalaenopsis, Vandas and such others as we in Britain would call stove and intermediate kinds. Odontoglossums do not do well, the temperature being too high.

Fruits and vegetables are grown for domestic use; most of the kitchen vegetables can be grown. The principal fruit is the Mango; there are also Grapes, Figs, Avocados, Bread Fruit and Sapotas; most tropical fruits can be grown and some that are sub-tropical.

Flowering and ornamental trees are a feature of the garden and pleasure grounds; all kinds of Palms among the ornamental leaved plants, and Cassias, Oleander, Poinciana, Bauhinia, Peltophorum, Erythrina, Hisbiscus, Bombax, and so on, among the flowering subjects. Moanalua is open to the public, and very many visitors and residents take advantage of the privilege, At the time of my visit (May) the Cassias and the Hisbiscus were indescribable. The Cassias are popularly known as Golden Shower (Cassia Fistula), Pink Shower (Cassia grandis) and Pink and White Shower (Cassia nodosa).

I spent a delightful afternoon with Mr. McIntyre and we both enjoyed the long talk about the great ones in British horticulture of twenty-five and thirty years ago—many of them are gone, but most of them have left a reputation that will keep their memory green for many years'." *W. Cuthbertson.*

ANNUALS AT REGENT'S PARK.

THOSE who have never had the opportunity of seeing annuals used on a large scale for flower bedding should take the opportunity during the next few weeks of visiting the flower garden at Regent's Park, where some of the largest beds have been planted entirely with annuals. Those of us who have known the flower garden at Regent's Park for a long number of years recognise that the display of flowers provided each season is one of the finest in the metropolis and is, indeed, worth a long journey to see, for, besides the bedding, the large vases and urns, which are filled this year principally with the Ivy-leaved Pelargonium Galilee, the long herbaceous border and the beautiful shrubs and lawns are maintained in the highest perfection.

As is to be expected, some of the annuals used make a more beautiful display than others, and I think the palm must be given to a bed of lavender and pink Viscaria over a ground of Silver Queen Petunia, for the combination of colours is exceedingly effective. Some, however, might prefer the very handsome bed planted entirely with dwarf and tall Phlox Drummondii, and I must confess that I have never seen so many glorious forms and colours of this useful half-hardy annual as in this large bed at Regent's Park.

Another bed that stands very high in the scale is the one planted entirely with Balsams, with a groundwork of white and blue Ageratum, an outer row of Phlox Drummondii and an edging of Centaurea maritima. The only criticism that can be urged against this fine bed is that it is rather formal in appearance. The Balsams are perfect examples, each plant almost a counterpart of its neighbour, and studded with the rosette-like flowers in a variety of colours.

Another exceedingly effective bed, now getting over, is one of Salpiglossis, a flower that offers some of the most glorious colourings imaginable. The vigour and freedom with which these plants were flowering somewhat surprised me, as the Salpiglossis is not an easy plant to grow, but it seems to favour special soil and district. For example, Salpiglossis does uncommonly well at Southampton, where a few years ago I saw some magnificent beds in the public parks there.

At the time of my visit, July 22, one of the beds at Regent's Park was being furnished with seven different varieties of Scabious, and no fewer than eight hundred large plants from forty-eight-sized pots were required to fill the bed, which was edged with the dwarf double varieties, such as dwarf double pink, dwarf double purple and dwarf double white. Another very effective bed, although not entirely of annuals, was furnished with Coreopsis interspersed with tall Heliotrope; and it may be observed in passing that where the spring bedding delays the sowing of annuals direct in the beds, they may be grown on in pots in frames to be put into their permanent position when the ground is cleared.

Another charming bed was planted with Viscaria Lavender, over a ground of Ageratum Little Dorrit and edged with Begonia The Hon. Mrs. F. W. Lambton. It seemed at a distance like a glorious mass of blue Linum swaying in the breeze. Still another bed was planted with Godetia Pink Pearl and Lavender, but this was rather heavy in effect, although it promised to be better when the single Lavender variety was more open. Clarkias are also used, and a bed of this flower edged with Maggie Mott Viola was very floriferous, whilst another large, oval-shaped bed was furnished with Double Pink Godetia edged with the dwarf Single Pink Godetia.

The large raised border in front of the shrubbery, where Mr. T. Hay made, I believe, the first planting of Dahlias in Regent's Park, is a mass of colour with Antirrhinums planted in blocks of separate tones; seen from a distance, the effect is gorgeous. Of the several varieties many would perhaps select Victory as the finest, and others especially good are Coral Red, Madonna and Prima Donna.

Mr. Campbell, who is to be complimented on the excellent condition of the Park, has again planted a large border with Dahlias near the Portland Road entrance, and already some of the plants are in bloom, whilst the dwarf Coltness Gem type used along the front row are flowering freely, their vigour and general healthy appearance pointing to a grand display of these plants in their season. Londoners may, indeed, be satisfied with the efforts which the park authorities make to provide them with floral beauty from the beginning to the end of the season. *T.*

PUBLIC PARKS AND GARDENS.

BRIGHTON Town Council has approved the purchase, at a cost of about £10,000, of the Saddlescombe Estate, near the Devil's Dyke. The estate is 680 acres in extent. The Council has also agreed to purchase, for £6,600, Patcham Place, an old Georgian house with twenty two acres of woodlands, standing on the main London Road, three miles north of the town.

THE Ministry of Health has sanctioned the loaning of £4,425 by Bournemouth Town Council for laying out Malvern Road recreation ground.

THE Llantarnum (Mon.) Urban District Council proposes to apply to the Ministry of Health for sanction to spend £525 on laying-out a recreation ground.

THE Urban District Council of Minehead has under consideration a new offer of land from Mr. A. F. Luttrell, the owner of the foreshore, with a view to the Council laying it out for gardens and a promenade.

SOLIHULL Urban District Council has decided to purchase about fifteen acres of land near Stratford Road for a recreation ground.

THE Urban District Council of Tipton is seeking sanction to a loan for the purchase and laying-out of part of Cotterhills Farm Estate for a recreation ground.

IT is announced that the purchase of Norwood Grove, adjoining Streatham Common, will be completed on or before Michaelmas Day. The area, which is to be conveyed to the Croydon Corporation for permanent preservation, extends to thirty-two acres, and the contract ensures that a further area shall be protected against building. The total sum raised has been nearly £20,000, not counting the cost of the Rookery, amounting to £3,000. The London County Council, Wandsworth Borough Council, and Lambeth Borough Council together contributed over £11,000.

THE Town Council of Chelmsford has under consideration the provision of a recreation ground in Springfield.

MIDDLETON Town Council has applied to the Ministry of Health for sanction to borrow £3,750 for the purchase of Parkfield House and grounds, Manchester Old Road, for municipal offices and public walks and pleasure grounds.

UNIFORMITY IN COMPOSITION OF CYANOGAS.

ONE or two reports have been received from various users of cyanogas calcium cyanide in the early part of the season in which it has been reported that in some instances the material has been found ineffective in killing.

It has been suggested that this might be due to lack of uniformity in composition. As a result of this I have had samples taken at random from various consignments of this material and had them analysed in our laboratories, and I give below results of the analyses of these three grades, G. grade fumigant, used for glasshouse fumigation against white, black and green fly; A. dust, for the destruction of rats and other rodents; and granular, for soil fumigation.

G. GRADE.

Sample No.		Per cent.
1/5/26	% Ca $(CN)_2$ in Cyanogas ...	49·56
2/5/26	,, ,, ,, ,, ,, ...	48·76
3/5/26	,, ,, ,, ,, ,, ...	49·45
4/5/26	,, ,, ,, ,, ,, ...	50·06
5/5/26	,, ,, ,, ,, ,, ...	50·16
6/5/26	,, ,, ,, ,, ,, ...	47·63
7/5/26	,, ,, ,, ,, ,, ...	49·40
8/5/26	,, ,, ,, ,, ,, ...	49·40
9/5/26	,, ,, ,, ,, ,, ...	48·97
10/5/26	,, ,, ,, ,, ,, ...	48·97
11/5/26	,, ,, ,, ,, ,, ...	50·78
12/6/26	,, ,, ,, ,, ,, ...	46·81
13/6/26	,, ,, ,, ,, ,, ...	46·10
14/6/26	,, ,, ,, ,, ,, ...	48·61
15/6/26	,, ,, ,, ,, ,, ...	48·35
16/6/26	,, ,, ,, ,, ,, ...	50·33

A. DUST.

Sample No.		Per cent.
A. 1/6/26	% Ca $(CN)_2$ in Cyanogas ...	48·39
A. 2/6/26	,, ,, ,, ,, ,, ...	49·05
A. 3/6/26	,, ,, ,, ,, ,, ...	40·97
A. 4/6/26	,, ,, ,, ,, ,, ...	47·80
A. 5/6/26	,, ,, ,, ,, ,, ...	44·40
A. 6/6/26	,, ,, ,, ,, ,, ...	45·04
A. 7/6/26	,, ,, ,, ,, ,, ...	48·36
A. 8/6/26	,, ,, ,, ,, ,, ...	44·57
A. 9/6/26	,, ,, ,, ,, ,, ...	43·81
A. 10/6/26	,, ,, ,, ,, ,, ...	47·00
A. 11/6/26	,, ,, ,, ,, ,, ...	47·61
A. 12/6/26	,, ,, ,, ,, ,, ...	40·23
A. 13/6/26	,, ,, ,, ,, ,, ...	38·95
A. 14/6/36	,, ,, ,, ,, ,, ...	45·70
A. 15/6/26	,, ,, ,, ,, ,, ...	42·51
A. 16/6/26	,, ,, ,, ,, ,, ...	44·85

GRANULAR.

Sample No.		Per cent.
1/6/26	% Ca $(CN)_2$ in Granular ...	47·52
2/6/26	,, ,, ,, ,, ,, ...	49·03
3/6/26	,, ,, ,, ,, ,, ...	50·71
4/6/26	,, ,, ,, ,, ,, ...	46·20
5/6/26	,, ,, ,, ,, ,, ...	50·57
6/6/26	,, ,, ,, ,, ,, ...	48·60
7/6/26	,, ,, ,, ,, ,, ...	48·45
8/6/26	,, ,, ,, ,, ,, ...	53·12
9/6/26	,, ,, ,, ,, ,, ...	48·17
10/6/26	,, ,, ,, ,, ,, ...	49·77
11/6/26	,, ,, ,, ,, ,, ...	50·71
12/6/26	,, ,, ,, ,, ,, ...	49·53
14/6/26	,, ,, ,, ,, ,, ...	48·31
15/6/26	,, ,, ,, ,, ,, ...	50·12
16/6/26	,, ,, ,, ,, ,, ...	49·87

It will be observed that there is little variation in composition in any of the grades, and I am of the opinion that any variation in G. grade is not in any way responsible for the unsatisfactory results that have been recorded.

On closer investigation I find they can be accounted for by a study of the conditions prevailing at the time of the fumigation. Factors such as: (1) insufficient allowance for leakage; (2) house humidity too high; (3) soil conditions too moist; are likely to have a very serious influence upon the killing properties of cyanogas.

The ideal conditions for the successful use of cyanogas calcium cyanide at this time of the year are: (1) to fumigate only when the sun has practically set; (2) to fumigate just when the plants are requiring water, this minimises the amount of humidity in the house ; (3) to choose a warm night in preference to a cold one for fumigation purposes ; (4) maintain a level temperature throughout the period of fumigation, so far as possible in the neighbourhood of 65° to 70°, thus obviating any undesirable condensation of moisture in the house which would bring down with it the gas owing to its solubility ; (5) should any condensation occur during the night when fumigation has been in progress it is wise to damp down the plants next morning in order to wash off the film of moisture which would contain a certain amount of acid gas and, therefore, if left too long in contact with the foliage, would be likely to cause scorching ; (6) it is desirable that there should be as small a margin as possible between the outside and inside temperature, as this considerably minimises the risk of condensation should there be a fall in the inside temperature through any unforeseen circumstances ; (7) it is not wise to fumigate after a very wet, warm day, as the relative humidity is bound to be very high, and this is likely to cause condensation ; (8) in the case of younger plants it is essential to start with a much lower concentration than would be used later in the season when the plants are more firmly established, and on plants where one may be uncertain of results owing to lack of experience, it is far better to start with a concentration of about one-fifth-of-an-ounce per 1,000 cubic feet and work up as required. *Theodore Parker.*

INTERNATIONAL CONFERENCE ON FLOWER AND FRUIT STERILITY.

This conference is to be held under the auspices and with the financial support of the Horticultural Society of New York on August 12 to 14, 1926. The organisation of the conference has been in the charge of an executive committee consisting of Dr. N. L. Britton, chairman, Mr. Frederic Newbold, treasurer, and Dr. A. B. Stout, secretary, and a local advisory committee consisting of Professor R. A. Harper and Professor H. M. Richards, of Columbia University, Dr. C. Stuart Gager, Director of the Brooklyn Botanic Garden, Dr. William Crocker, Director of the Boyce Thompson Institute for Plant Research and Mr. Leonard Barron, editor of *Garden and Home Builder.* Various persons both in America and abroad, have rendered valuable assistance in the development of the programme.

The entertainment committee for the conference consists of Mr. John Scheepers, chairman, Mrs. Harold Irving Pratt, Mrs. Samuel Sloan, Mr. T. A. Havemeyer and Mr. W. R. Coe. This committee has selected The Hotel Roosevelt, Madison Avenue and 45th Street, as headquarters, and has secured a special minimum rate for room and bath for persons attending the conference. Reservations may be made either through Mr. John Scheepers, 522, Fifth Avenue, New York City, or the Secretary of the conference. Also, if notice is sent regarding the name of the vessel and the date of arrival at New York, persons coming from abroad to the conference will be met at the piers and conducted to hotel headquarters.

THURSDAY FORENOON, AUGUST 12.

The conference will meet at Columbia University in the auditorium on the first floor of Schermerhorn Hall, and will begin promptly at 9.30, continuing until 12.30 with the following programme. The hours given for all the sessions of the conference are daylight-saving time.

1, Opening Address by Dr. N. L. Britton, Chairman of the Executive Committee of the Conference ; 2, Address of Welcome, by Mr. T. A. Havemeyer, President of the Horticultural Society of New York ; 3, Types of Sterility in Plants and their significance in horticulture, by Dr. A. B. Stout, The New York Botanical Garden ; 4, Sterility in Relation to the Origin of Species, by Professor E. C. Jeffery, Harvard University ; 5, Investigations on the Causation of Gametic Sterility, by Professor Georg Tischler, University of Kiel, Gemany ; 6, Relationship of Polyploidy to Pollen Sterility in the Genera Rubus and Fragaria, by Dr. E. A. Longley, Bureau of Plant Industry ; 7, Seed Production in Sterile Citrus hybrids : its scientific explanation and practical significance, by Dr. Walter T. Swingle, Bureau of Plant Industry ; 8, Chromosome Studies in Teosinte and Teosinte-maize Hybrids, by Dr. L. F. Randolph, Cornell University ; 9, The Course of Pollen Development in certain Roses and its Meaning, by Dr. Kathleen B. Blackburn and Dr. J. W. Heslop Harrison, Armstrong College, University of Durham, Newcastle-on-Tyne, England ; 10, Dormancy in Hybid Seeds, by Dr. William Crocker, Director, Boyce Thompson Institute for Plant Research ; 11, Interspecific sterility and Chromosomes in Crepis, by Professor E. B. Babcock and Mr. C. W. Haney, University of California.

At the close of this session motor cars will be provided for the trip to The New York Botanical Garden, where lunch will be served.

THURSDAY AFTERNOON, AUGUST 12.

This session will be held in the Lecture Hall of the New York Botanical Garden, from 2 to 4.30.

1, The Role of Sterilities in the Breeding of Floricultural Plants, by Professor A. C. Beal, Cornell University ; 2, Sterilities Encountered in the Breeding of Paeonies, by Dean A. P. Saunders, Hamilton College ; 3, Sterilities in Carnations with Special Reference to Intersexes, by Mr. C. H. Connors, New Jersey Agricultural Experiment Station ; 4, Sterilities Encountered in Breeding Roses, by Mr. J. H. Nicolas, Conrad Pyle Company, Research Department ; 5, General Survey of Sterilities in Hyacinths, Tulips and Narcissi, by Dr. W. E. de Mol, Lisse, Holland ; 6, The Sterilities of Certain Pelargoniums, by Mr. Jean Kerr, The New York Botanical Garden ; 7, Correlation and Cyclic Sterility in Cleome, by Professor A. E. Murneek, University of Missouri ; 8, The Effect of Light, Carbon-dioxide and Temperature upon Flower and Fruit Production, by Mr. John M. Arthur, Boyce Thompson Institute for Plant Research ; 9, Partial Sterility in Crosses of Johnson Grass on Sorghum : and 10, Complete Sterility in Crosses of Lathyrus on Pisum, by Mr. Harry N. Vinall, Bureau of Plant Industry.

At the close of this session there will be opportunity for inspection of the New York Botanical Garden. Groups with guides will visit the library, herbaria and museum, the various greenhouses, the experimental greenhouse and plant-breeding plots especially devoted to studies of sterility, or the grounds in general with the numerous collections of living plants.

FRIDAY, AUGUST 13.

The scientific sessions at the Boyce Thompson Institute will be held in the music room of the Hudson River Country Club adjoining the Institute. Buffet luncheon will be served at the Club between the morning and afternoon sessions.

1, Sterilities in Fruits : a Summary of Twenty Years of Study at the Royal Horticultural Society's Gardens, by Mr. F. J. Chittenden, Director, Royal Horticultural Society Garden, England (Delegate from the Royal Horticultural Society); 2, Pollen Producton and Incompatibilities in Apples and Pears, by Dr. Rudolph Florin, Royal Swedish Museum of Natural History, Stockholm, Sweden ; 3, Self- and Cross-incompatibility in Apples, Plums and Cherries, by M. B. Crane, The John Innes Horticultural Institution, England ; 4, Some Factors to be Considered in the Practical Application of Sterility Studies of Fruits, by Professor A. J. Heinicke, Cornell University ; 5, An Evaluation of the Methods of Study of the Pollenation Requirements of Orchard Fruits, by Professor L. H. McDaniels, Cornell University ; 6, Apple Pollenation Studies in California, by Professor E. L. Overholser, University of California ; 7, The Results of Cross-pollenations between Different Varieties of Apples, Pears, Plums and Cherries, by Mr. Richard Wellington, State Agricultural Experiment Station, Geneva, N.Y. ; 8, Field Studies of the Pollenation Requirements of Certain Deciduous Fruits under California Conditions, by Professor Warren F. Tufts, A. H. Henderson and G. L. Philp, University of California ; 9, Studies on the Sterility of the Fruit Trees in Russia, by Professor W. Paschkevitch, presented by Professor N. Maxomow, Institut de Botanique Appliquée, Leningrad, Russia ; 10, Self-sterility in Apples, Pears and other Orchard Fruits, by Dr. M. B. Waite, Bureau of Plant Industry ; 11, Cross-sterility in some Deciduous Fruits, by Professor E. C. Auchter, University of Maryland.

1, Abscission : (*a*) The Phenomenon in General ; (*b*) With Special Reference to Citrus Fruits and Cotton, by Professor Francis E. Lloyd, McGill University ; 2, Types of Sterility in Filberts, by Professor C. E. Schuster, Oregon Agricultural College ; 3, Vegetative and Fruiting Branches in the Date Palm and Intermediates between them, by Dr. Walter T. Swingle, Bureau of Plant Industry ; 4, Sterilities in Blueberries, by Dr. Frederick V. Colville, Bureau of Plant Industry ; 5, Sterility in Peaches, by Mr. C. H. Connors, New Jersey Agricultural Experiment Station ; 6, Sterility in Grapes : (*a*) On the Sterility of Madelaine Angevine in Northern Japan : (*b*) Sterility in Seedless Grapes with Reference to Fruit Formation ; (*c*) Sterility in a Japanese Wild Grape (Vitis Coignetiae), by Professor Torasaburo Susa, Hokkaido Imperial University, Sapporo, Japan ; 7, The Influence of Pruning on the Viability of Pollen and the set of Berries in Vinifera Grapes, by Dr. A. J. Winkler, University of California ; 8, The Self- and Cross-sterilities in Japanese Pears (Prunus serotina), by Professor Akio Kikuchi, Tottori Agricultural College, Japan ; 9, Virus Diseases in Relation to Fruit and Seed Production, by Dr. L. O. Kunkel, Boyce Thompson Institute for Plant Research ; 10, Pollen-tube Behaviour with Reference to Sterility in Datura, by Professor John T. Buchholz, University of Texas, and Professor A. F. Blakeslee, Carnegie Institution of Washington, Station of Experimental Evolution, Cold Spring Harbor.

At the conclusion of this session there will be opportunity for inspection of the buildings and grounds of the Boyce Thompson Institute for Plant Research. Guides will be available for showing any guests through the building and grounds of the Institute, either before, between, or after the scientific sessions.

EVENING OF AUGUST 13.

An informal gathering and smoker will be held at The Hotel Roosevelt. At this time there will be opportunity, if it is desired, for sectional meetings for discussions without formal programme.

SATURDAY, AUGUST 14.

The Conference will hold its sessions on this day at the Brooklyn Botanic Garden. To reach the Brooklyn Botanic Garden, from Manhattan West Side, take B.M.T. Subway, Brighton Express or Brighton Local, to Prospect Park Station. Leave Station at rear exit.

The Saturday forenoon session will commence at 10 a.m.

1, The Role of Sterilities in the Improvement of Vegetable Crops, by Professor C. E. Myers, Pennsylvania State College ; 2, Nutritional Factors in Seed and Fruit Formation in Vegetable Crop Plants, by Professor Paul Work, Cornell University ; 3, Environmental Factors Affecting Seed-stalk Development in Celery, by Professor H. C. Thompson, Cornell University ; 4, Sterility in the Common Cabbage, by Professor L. R. Detjen, University of Delaware ; 5, Efficiency of Self- and Cross-fertility in Onion and Cabbage, by Professor F. Kotowski, College of Agriculture, Warsaw ; 6, Sterility or Fertility in Trifolium and Melilotus, by Dr. Adrian J. Pieters, Bureau of Plant Industry ; 7, Sterility in Cereals, by Dr. Carlton R. Ball, Bureau of Plant Industry 8, Types of Sterility in Wild and Cultivated Potatos, by Dr. Charles F. Clark, Bureau of Plant Industry ; 9, Sterility Factors in Cotton, and 10, Progressive Sterility in Palms, by Dr. O. F. Cook, Bureau of Plant Industry ; 11, Partial Sterility in Sugar Cane and Sugar

Beets, by Dr. Elmer W. Brandes, Bureau of Plant Industry.

The members of the Conference will be the guests of the Brooklyn Botanic Garden at luncheon.

Saturday Afternoon.

1, Manifestations of Impotence in a Plant Propagated by Seed, by Dr. D. F. Jones, Connecticut Agricultural Experiment Station; 2, Method of Collecting and Studying Wind-blown Pollen or the Absence of Wind Distribution, by Dr. M. B. Waite, Bureau of Plant Industry; 3. Sterility of Pollen in Datura, by Dr. A. F. Blakeslee. Carnegie Institution of Washington, Station of Experimental Evolution, Cold Spring Harbor, and Mr. J. L. Cartledge, University of Pittsburg; 4, Parthenocarpy in Fruits, by Professor R. W. Hodgson, University of California; 5. The Heredity of Self-sterility in Veronica syriaca, by Professor Ernst Lehmann, University of Tubingen, Germany; 6, The Genetics and Physiology of Self-sterility in Nicotiana, by Professor E. M. East, and A. J. Mangelsdorf, Bussey Institution, Harvard University; 7, The Genotypical Problems of Self- and Cross-incompatibility, by Dr. M. J. Sirks, Institut voor Plantenverdiling, Wageningen, Holland; 8, Studies of the Hereditary Values of Self- and Cross-incompatibility, by Dr. A. B. Stout, The New York Botanical Garden; 9, Inherited Sterility in Shepherd's Purse, by Professor George H. Shull, Princeton University; 10, A Linkage between Self-sterility Factors and Flower Colour, by Mr. F. Brieger, and Mr. A. J. Mangelsdorf, Bussey Institution, Harvard University.

Papers Read by Title.

1. Relations of Hybridization to Fertility and Sterility in Primula, by Professor Alfred Ernst, University of Zurich, Switzerland; 2. Pollen Abortion in Apples with Reference to Fruit-setting, by Mr. Erling Kvaale, Fellow, Scandinavian American Foundation, 1924-1925, Graduate Norges Landbrukshogskule, Norway; 3, Why Lysimachia nummularia, always very Floriferous, is Ordinarily Sterile, by Dr. F. Gagnepain, Museum d'Histoire Naturelle, Paris, France.

At the close of the afternoon session an opportunity will be given to inspect the plantations and buildings of the Brooklyn Botanic Garden, including the experimental garden, general, systematic section, childrens' garden, rock garden and other features. *A. B. Stout, Secretary, International Conference on Flower and Fruit Sterility*, 598, *Madison Avenue, New York City.*

INTERVARIETAL DIFFERENCES IN THE POTATO.

(*Continued from p.* 75.)

(B)—The Physiology of the Flowers and Fruit.

(*a*) *Flower.*—The opening of the flower bud takes place at the apex and seems to be occasioned by the increasing growth and pressure of the enclosed floral parts. Normally, the petals are the first structures to appear when the buds open, but owing to different relative developments in some varieties, *e.g.*, Rector and Catriona, the stamens and pistil are usually visible before the petals. The colour of the petals commences to develop whenever the bud is about to open; in the immature bud they are greenish. One day, or perhaps two days, after the bud has opened, the petals are fully developed, and in most varieties are reflexed. On some, however, such as Northern Star, Rhoderick Dhu, Arran Chief and Duke of York, this characteristic has not been observed. At this stage the anthers have developed their deepest colour and occasionally show browning at the tips. The stigma is now sticky. Full maturity of the flower is indicated when the petals lose their reflexed character, when the anthers are open and the stigma receptive. The pore at the apex of the stamens is at first round, but ultimately becomes oval, when the walls are deep brown with a white margin. The condition of full maturity may be maintained for several days. Ultimately, the flower begins to fade and a brownish colouring appears on the petals, which lose their elasticity, and do not open completely; finally they remain closed. The anthers become browner and, shrivelled, and a longitudinal slit usually appears on the inner side of each lobe. As the flower grows older the stigma loses its glistening appearance, and in non-fruiting varieties the flowers fall off along with their upper short flower stalks. Sometimes the corolla and stamens fall off first; at other times the corolla remains attached to the growing fruit for a period after the stigma and style have been thrown off.

The duration of the flowering period is peculiar to the variety; data have been collected for several varieties, and it appears from observations made in Edinburgh that individual plants may flower from four to eight weeks; individual inflorescences from two to three weeks; and individual flowers from six to fourteen days. Characteristic, however, as differences between varieties in these directions may be, variations in the daily blooming period form a more useful means of identification.

The Daily Blooming Period.—A marked difference exists in the sensitiveness of the flowers of various varieties to outside influences. Young flowers are more sensitive than older ones. Some varieties, *e.g.*, Bishop, open early in the day, and others, *e.g.* Northern Star, and Duke of York, open only in full sunshine. There is not much difference in the times of opening and closing of flowers of one variety in a particular locality. Temperature does not appear to exert such an influence over the movements of flowers as does moisture; some varieties, *e.g.*, Arran Comrade, Up-to-Date and British Queen, are very sensitive to the influence of moisture, others are not so readily affected. The normal period of closing in the afternoon also varies with the variety. The flowers of Bishop and some other varieties remain open to a later hour than those of Arran Comrade and British Queen

Pollen.—The pollen grains, which are generally round to elliptical in form, retain their capacity for germination for several days. In one variety they remained potent for six days in stamens which had been removed from the flower. The amount and viability of pollen seems to be a varietal characteristic. Although self-pollenation is normal in this country, the Potato flower seems to be adapted to insect visits; indeed, it is recorded that some varieties are at times odoriferous, *e.g.*, Templar.

(*b*) *The Capacity for Flower and Fruit Formation.*—Varieties differ in their natural tendency to flower and fruit. Thus, the following varieties flower and plum freely, Templar and Majestic; others, *e.g.*, British Queen and Up-to-Date, flower very freely but do not form fruit naturally; others, again, flower very seldom and have not been known to bear natural berries, *e.g.*, Great Scot, King Edward, Arran Chief and Northern Star. The formation of flowers is essentially constitutional for the variety; breeding and artificial selection have resulted in many practically non-flowering varieties being put on the market. The production of fruit in flowering varieties would appear to depend almost entirely on the formation of fertile pollen, as even such varieties as King Edward, Arran Chief and Up-to-Date fruit when viable pollen is used. During 1923, nine flowers of Up-to-Date, fertilised with pollen of the variety, Pepo, all produced normal berries. In seeking rogues in a field, caution must be exercised in judging whether a plant is a rogue or not, especially when the only difference discernible lies in the profusion of flowers; accidents, *e.g.*, injury to the stem by animals, implements or disease may induce a profuse setting of flowers, and in all cases the presence or absence of such exciting causes should be looked for. Bolters, because of their increased capacity for flower- and fruit-bearing may also be mistaken for rogues. To obviate such errors, those engaged in purifying stocks should familiarise themselves with the other characteristics of the bolter type peculiar to the variety in question.

(*c*) *Environmental Influences on Flower Formation.*—As the production of flowers can be influenced to a very great extent by environment, a word or two on this subject may be of interest. There appears to be a certain optimum condition of soil and atmospheric moisture, of warmth and of light, which is most favourable to the production of flowers; low temperature, too much moisture and too little light appear to be unfavourable, while warmth and plenty of sunshine seem to encourage flower formation. According to one authority, where the overground food supply (CO_2) exceeds the corresponding neutralising underground mineral supply through the roots, the plant is forced to develop organs which can consume carbon quickly, *e.g.*, flowers—a theory which find support in the fact that, when stems are partially severed, the production of flowers is greater than normal. Despite theoretical considerations, however, the fact remains that a variety may flower freely one year and show comparatively few flowers the next. Cultural conditions also, *e.g.*, hard ground, may increase the tendency to flower. *T. P. McIntosh.*

(*To be continued.*)

TRESPASS BY ANIMALS.

(*Concluded from p.* 52.)

The defences which the owner of the animals could raise are not very definite, but the first and most important of them would appear to be contributory negligence on the part of the injured person; this would occur in the case of a man enticing or irritating an animal and so causing it to come on to his property, and it would also appear to be applicable where the plaintiff is under an obligation to keep the divisional fence in good repair, and through his failure to do so, his neighbour's animals have damaged his garden. For a man cannot complain of what he has himself brought about.

Remoteness of damage is another defence which may be raised, for even though the damage may be natural to the animal, or a tendency to do it known, the damage in the particular case may be too remote to be a ground of liability. Thus, where a dog jumped over a low wall and fell on a man who was digging at the bottom of a well, it was held that the owner was not liable, the damage being too remote.

Where the trespass is caused by some *vis major*, the defendant may again have a ground for defence in this. Such a case would be possible where a perfectly good fence is blown down in a storm and the animals stray on to the neighbouring land before it is possible to rebuild the fence or remove the animals from the field.

Whether the act of a third party would be a good defence is a doubtful question, but it would seem that if a gate is left open by some third and unknown person, it would be very hard on the owner of the stock to make him responsible for the damage they do by going through it; it is, of course, a case of which of two innocent parties shall suffer, and probably the owner of the stock would be the one.

Having dealt with the liability of the owner and the defences he can put forward, the remedies the law gives to the injured party and how and when to exercise them may be considered.

The first and the best remedy at the disposa of the property owner is undoubtedly the Court. In most cases the amount of compensation will not be very great, and where it does not exceed £100, the action may be brought in the County Court.

If, however, the property owner does not wish to go to a Court of Law for his remedy, he can if he likes, exercise his right of *distress damage feasant*. This is a right given to any occupier of land to seize any animals which are unlawfully on his land doing damage there, and to detain them until he has received some compensation for the damage they have done. To exercise this remedy the animals must be there under such circumstances that an action for damages would lie against the owner or some other person responsible for them. There must also have been some damage done by the animals distrained, for they are detained as a security for compensation. Moreover, they must be seized while they are still on the land, and if the same animals come more than once, they cannot be detained in respect of damage committed on former occasions, but only for the present damage, nor can one animal be detained for the damage done by several, but only for its own share of the damage.

There is no right of sale in *distress damage feasant*, the animals being detained merely as security for compensation.

As regards how the animals distrained are to be dealt with, the distrainor may either keep them on the premises where they were seized, or he may take them to some other premises, or impound them in a public pound. Whatever he does with them, he must provide them with food and water while they are in his custody.

And lastly, while a man is exercising his right of *distress damage feasant* he is not allowed to bring an action in a court of law for the damage done by the animals distrained. Distress and action are alternative remedies which cannot be concurrently pursued.

One thing which an occupier of property may not do is to kill or injure the animals which are trespassing on his property. If he does so, not only will he be liable to their owner for the loss sustained, but he may also find himself defending a case of cruelty to animals as well. *H. A. Sharman.*

FRUIT REGISTER.

PEAR THOMPSONS.

I have no hesitation in describing this Pear as one of the most exquisite varieties in cultivation: but, unfortunately, the tree is not very free-bearing. It is admirable when grown as a cordon on a south or west wall, and will succeed as a standard. The fruits are ripe from October to November: they are uneven in outline, coloured pale lemon, with greyish or light russet shading; the flesh is beautifully white, melting and juicy, and of most delicious flavour.

This fine Pear was raised by Van Mons sometime prior to 1820, and the name commemorates the well-known superintendent of The Royal Horticultural Society's Gardens. In my opinion, this Pear may be bracketed with Doyenne du Comice as the best flavoured variety in cultivation.

CHERRY GOVERNOR WOOD BIGARREAU.

This variety is one of the most useful of all dessert Cherries, and will often succeed where "sweet" Cherries are not a pronounced success; for example, in some parts of Gloucestershire. The fruits ripen in early July; they are large, heart-shaped and coloured yellow with a rosy flush: the flesh is tender and very sweet. The tree is a prolific cropper.

This variety will succeed admirably with the Morello Cherry on a north wall, and proves a most useful fruit: it is a fine orchard-house variety. It was raised in Cleveland, U.S.A., in 1842, and named after the Governor of Ohio. It is self-sterile. *Ralph E. Arnold.*

HOME CORRESPONDENCE.

Apple Grafted on the Willow—I may inform Mr. George H. Copley that there is nothing unusual in grafting the Apple on the Willow, and the practice has been in vogue in west Wales for many years. I have been successful with the same operation on scores of occasions. My grandfather gave me the idea, but I do not think he claimed originality. Nevertheless, it proves that our ancestors were not bankrupt of vision. There are a few Willows around this establishment in which I am employed, and it is only about six weeks or so ago that I asked permission to graft them with Apple scions. I am not afraid of the results. *J. A. G., Loughton.*

SOCIETIES.

NATIONAL ROSE.

July 23.—The latest departure of the National Rose Society—a show of New Roses— was not quite so successful as its forerunners. The third week in July proved to coincide with the between season of the flower. The first crop of Roses was over, and the second crop had scarcely begun. In addition to this, growers in the eastern counties particularly, had suffered from the effects of storms, and some of the blooms were weather-stained. In spite of these misfortunes, which could not have been anticipated, it was an interesting show, at the Royal Horticultural Hall, Vincent Square, on the above date, and clearly indicated which of the Roses of recent introduction have "come to stay." To many of the visitors the principal interest centred in the competition for the "Daily Mail" Gold Cup, which was offered for "The Best New Scented Seedling Rose," and was intended to be won outright. The Cup was on view but, in the opinion of the judges, a seedling Rose, of "an exceptional standard of merit" was not forthcoming; consequently, no award was made. There had been thirty-three entries, but for various reasons only twenty-one exhibitors were able to bring their scented seedling Roses, Of these we were inclined to the opinion that No. 22, a crimson H.T. Rose of flattish shape, shown by Messrs. Bees, Ltd., was the most fragrant. No. 30, a well-formed H.T., shown by Messrs. G. Longley and Sons, was also deliciously scented, and this was of flesh pink colouring. No. 38, a crimson H.T. of flattish shape and shown by Messrs. B. R. Cant and Sons, also possessed good perfume. No. 12 was a hybrid Musk Rose, free flowering and of pale pinkish colour, shown by the late Rev. J. H. Pemberton, and this possessed plenty of fragrance of its type. There were many new seedling Roses in addition to those shown especially for fragrance, and all were eligible for the Society's award.

One Gold Medal and three Certificates of Merit were awarded, and we understand that Certificates were refused by the exhibitors of Nos. 12 and 37 as their acceptance would debar the seedlings from being again shown for the Gold Cup.

Gold Medal.

Lady Worthington Evans (Fig. 53).—This is a brilliant H.T. variety of medium to small size and good shape. The colour is a rich velvety scarlet, lightly touched with maroon at the base of the broad, recurving petals. It appears to have a vigorous habit, be free-flowering and to be an excellent garden Rose. The young foliage is purplish. Shown by Messrs. Alex. Dickson and Sons.

Certificates of Merit.

Adele Crofton.—This variety was also entered for the "Daily Mail" Cup, and while pleasantly fragrant, was no more so than several other varieties at the show. It is a double flower with pointed buds and of flattish shape when fully open. Its old gold colour is flushed with peach-pink. Shown by Messrs. Alex. Dickson and Sons.

Charming Princess.—A rather bizarre Pernettiana variety of poor shape when fully open. The basic colour is old gold and the outer halves of the flattish petals are stippled with light crimson. Shown by Mr. Thomas Hancock.

Cherry.—A medium-sized H.T. Rose of thin, crimson-lake colouring with a pale gold reverse. Shown by Messrs. S. McGredy and Son.

Other New Roses.

Although it did not find favour with the judges, Laxton's Bedford Crimson had plenty of admirers. It is an excellent, fully double H.T. variety, of good shape. very floriferous and of a bright crimson colour that does not burn or become blue when the flowers are mature. It should be an excellent bedding variety. Dorina Neave, shown by the Rev. J. H. Pemberton, is a fragrant H.T. Rose of globular shape and medium pink shade, which is slightly paler at the tips of the petals. J. C. Thornton, shown by Messrs. Bees, Ltd., appears to be an excellent Rose for bedding or general garden purposes. It is free-flowering, pretty in all stages of development and of bright crimson colour.

Groups of Roses.

There were two classes for groups of cut Roses and only varieties of British or American origin, sent out between January 1, 1919, and December 31, 1924, were to be included. The class for Roses on a table space measuring six square feet was the more popular. and the six exhibits occupied the floor space of the hall. The first prize was awarded to Mr. Elisha J. Hicks for an imposing group composed chiefly of pillars of very good Roses. His chief varieties were Betty Uprichard, Ophelia. Madame Butterfly and Mrs. H. Stevens, at the four corners of the table, with Mabel Morse, Christine, Lady Inchiquin, Hoosier Beauty and brilliantly-coloured blooms of Captain R. Clerk.

Messrs. S. McGredy and Son, who were second, had the most graceful arrangement in the class, but many of their blooms, otherwise very good, showed signs of the recent inclement weather. Their generously filled baskets of Betty Uprichard, Emma Wright, Mrs. H. Morse and Mrs. Barraclough were very delightful. The third prize was won by Messrs. Alex. Dickson and Sons with a pleasing arrangement of pillars and large baskets of Lady Helen Maglona, Dame Edith Helen, Shot Silk, Old Gold and other beautiful Roses. The Rev. J. H. Pemberton was awarded a fourth prize

The four groups of cut Roses each occupying a space measuring five feet by three feet, were arranged against the wall. The best was shown by Messrs. R. Harkness and Co., who had a good display of Los Angeles, K. of K., Madame Butterfly, Betty and brilliant blooms of Miss C. E. van Rosson. Messrs. D. Prior and Son, who were second, had grand vases of Mrs. Henry Bowles, Lady Inchiquin, Betty Uprichard and other decorative varieties. Messrs. A. Warner and Son were third.

There was only one exhibit of twelve distinct varieties of exhibition Roses, and this was so over-dressed that the blooms, though fresh and of good size, did not display their character. Messrs. D. Prior and Son were awarded the first prize, and their varieties included J. G. Glassford, Martha Drew, Mrs. C. Lamplough and Capt. Kilbee Stewart.

TAMAR VALLEY AND DISTRICT.

The exhibition of the Tamar Valley and District Commercial and Amateur Horticultural Society was held on July 14 in the Guildhall, Saltash. The object of these exhibitions is to improve not only the growing but also the packing and marketing of the produce. The entries numbered about 150 more than last year. The schedule included classes for vegetables, fruits and flowers, and was divided into two sections, one of which was open only to amateurs, including allotment-holders. The vegetables and fruits were shown in market packages or bundles, and the first prizes were won by Mr. D. le Patourel, Villaton, for Cabbages; by Messrs. F. Cloke and Sons, Cargreen, for Lettuces; Mr. W. J. Martin, St. Dominic (Special Prize); and Mr. J. Gumb, first, for Peas; Messrs. R. H. Hobbs and Sons, for Potatos; Mr. L. Hocking, St. Dominic, for Rhubarb; Messrs. Dorey and Lawson, Elburton, for a twelve-pound non-returnable box of Tomatos, for a twelve-pound "chip" of Tomatos, and for a package not included in the above; Messrs. R. R. Hobbs and Sons, Saltash, for the three best Cucumbers, and the best box of Cucumbers; Messrs. R. J. Every and Sons. for one vegetable, forced or otherwise; Mr, W. O. Freeman, for the best hamper for a private trade; Mr. A. J. Summerfield, Botusfleming, for a twelve-pound "chip" of green Gooseberries; Mr. W. O. Freeman, for a six-pound "chip" of red dessert Gooseberries; Mr. H. R. Attfield, for a six-pound "chip" of dessert Gooseberries of any other colour; Mr. W. Scoble, Botusfleming, for Black Currants; Mr. A. J.

Summerfield, for Red Currants; Mr. R. Summerfield, Hatt, for three half-pound punnets of Loganberries; Mr. H. R. ATTFIELD, for a two-pound "chip" of Raspberries and for three half-pound punnets of Raspberries; Mr. M. A. PASSMORE, Chilsworthy, Gunnislake, for a twelve-pound "chip" of Cherries; Messrs. COCKS BROS., Calstock, for Plums, and for the best exhibit of any fruit not included in the above classes, not forced, Mr. T. H. MARTIN, St. Mellion.

In the flower classes, Mr. L. HOCKING exhibited the best Sweet Peas; Messrs. A. F. RICHARDS AND SONS, the best twelve bunches of herbaceous flowers and the best three commercial bunches of herbaceous flowers; Mr. H. R. ATTFIELD, the best collection of market flowers; and Mr. W. O. FREEMAN, the best three bunches of Roses.

ROYAL HORTICULTURAL.

JULY 27.—The exhibition at the fortnightly meeting on Tuesday last was small, and there were fewer visitors than usual, doubtless owing to the holiday season. The groups were of varied character and collectively they made a fine display of colour, whilst large numbers of novelties were presented for awards.

The Orchid Committee gave two Awards of Merit, and the Floral Committees granted seven Awards of Merit. No award was made to a novelty by the Fruit and Vegetable Committee, but two of the most important exhibits in the Hall were staged in this section—an exhibit of vegetables by Messrs. BARR AND SONS and a collection of Gooseberries by Mr. J. C. ALLGROVE: both were awarded Gold Medals.

Orchid Committee.

Present: Sir Jeremiah Colman, Bt. (in the chair), Mr. C. J. Lucas, Mr. Gurney Wilson, Mr. S. W. Flory, Mr. A. Dye, Mr. H. G. Alexander, Mr. J. E. Shill, Mr. T. Armstrong, Mr. H. H. Smith, and Mr. H. T. Pitt.

AWARDS OF MERIT.

Sophro-Laelio-Cattleya Prudence (S.-L. laeta × C. Fabia).—A well-formed flower with the sepals and petals coloured deep rosy-purple (the tone known as rhodomine), darker at the tips and with a trace of white at the base. The lip, which is pleasingly lined, is bronzy-orange in the centre, this colour merging in the deeper tone of the other segments at the end. Shown by Lt.-Col. Sir GEORGE HOLFORD (Orchid-grower, Mr. H. Alexander), Westonbirt, Tetbury, Gloucestershire.

Odontioda Esme (Oda. Manora × Oda. Red Cross).—The flowers of this variety are not of exceptionally large size, but they are well-shaped and of very rich colouring—old rose stained with purple at the edges, the lip having blotches of pale mahogany colour and a conspicuous bright golden crest. The spike had seven well-developed blooms. Shown by Messrs. CHARLESWORTH AND Co., Haywards Heath.

CULTURAL COMMENDATIONS.

Odontoglossum Cleopatra Memoria Lionel Crawshay.—A plant of this Odontoglossum had an enormous inflorescence with thirteen fully expanded flowers and forty buds on the side branches. Shown by Messrs. SUTTON BROS., Woodside Nurseries, Hassocks.

Coelogyne Sanderiana.—A splendidly flowered plant of this beautiful species, which formed the centre piece in Mr. H. T. PITT's exhibit.

GROUPS.

The larger of two exhibits was shown by Mr. H. T. PITT (gr. Mr. Thurgood), Rosslyn, Stamford Hill. The plants were exceedingly healthy and splendidly flowered. At the back long spikes of Dendrobium Dalhousieanum overhung the beautiful plant of Coelogyne Sanderiana, which was used as a centre piece. The exhibit was rich in Cattleyas, Miltonias and Odontoglossums, notable plants being Cattleya Aphrodite, C. gigas, C. g. Mrs. E. Ashworth, C. Warscewiczii Frau Melaine Beyrodt, Miltonia Rev. W. Wilks, M. Regina, Odontoglossum cordatum, Masdevallia venusta, M. Radiosa, Angraecum Scottianum and Brassia Lawrenceana longissima.

Messrs. CHARLESWORTH AND Co., Haywards Heath, showed a small group which contained well-grown plants of Cattleya Hesta, Odontonia Bedfordiae (M. Bleuana × O. amabile splendens), Vanda Herziana, with a very rich violet-coloured lip, Odontonia Aglaon and Odontoglossum Norvic.

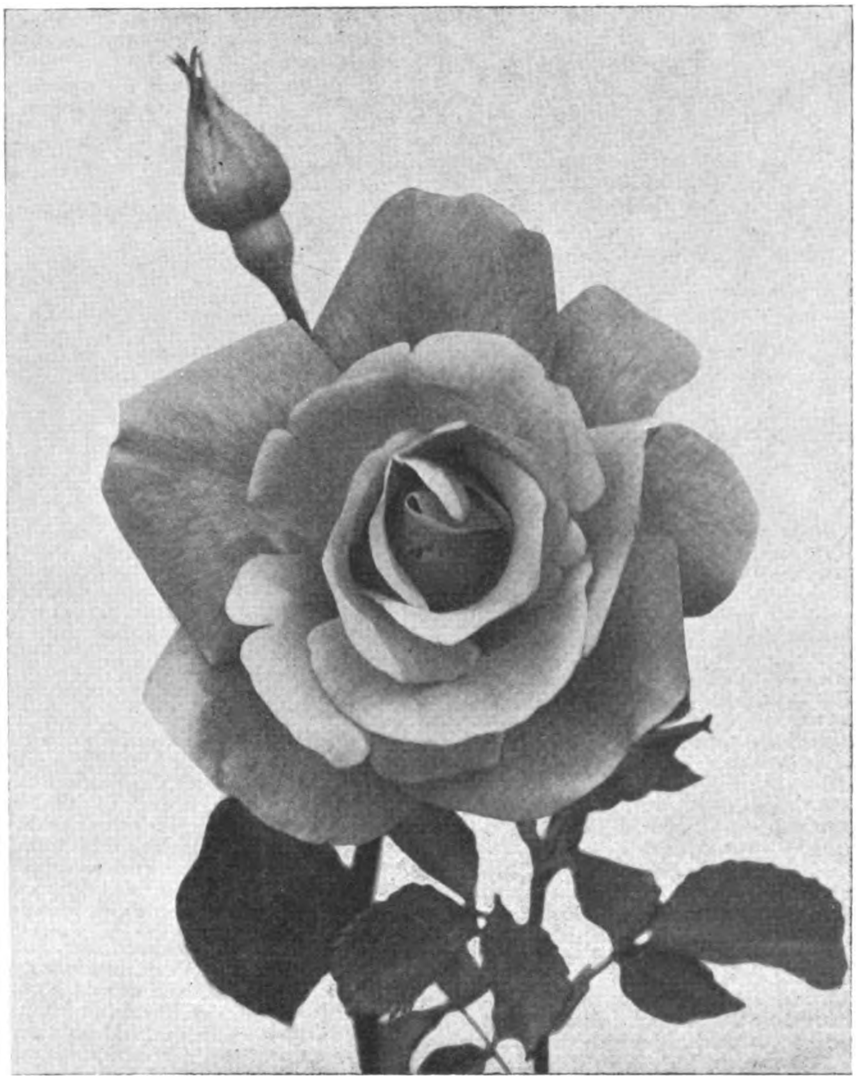


FIG. 53.—ROSE LADY WORTHINGTON EVANS.

N.R.S. Gold Medal, July 23; (see awards p. 96.)

Floral Committee.

Present: Section A.—Mr. Henry B. May (in the chair), Mr. F. J. McLeod, Mr. Arthur Turner, Mr. Mark Fenwick, Mr. J. M. Bridgeford, Mr. W. H. Page, Mr. M. C. Allwood, Mr. A. Vasey, Mr. James B. Riding, Mr. D. B. Crane, Mr. W. P. Thomson and Mr. Charles E. Pearson.

Section B.—Mr. Gerald W. Loder (in the chair), Mr. W. J. Bean, Mr. E. A. Bowles, Mr. G. Reuthe, Mr. F. G. Preston, Mr. Reginald Cory, Mr. E. H. Wilding, Mr. A. Williams, Mr. Clarence Elliott, Mr. T. Hay, Mr. R. C. Notcutt, Mr. Charles T. Musgrave and Sir William Lawrence.

AWARDS OF MERIT.

Allium descendens.—According to the *Index Kewensis*, Allium descendens, Linn. should be A. sphaerocephalum. The illustration in *Bot. Mag.*, 251, gives a good impression of the globular heads of rose-purple flowers, and the text states that it is a native of Switzerland, from whence it was introduced in 1766. The leaves are long and slender and the plants grow to a height of three feet. Shown by Mr. R. C. NOTCUTT.

Ceanothus Henri Défosse.—A valuable addition to hybrid Ceanothuses, of which C. Gloire de Versailles is the best known in our gardens. The clusters of flowers are not so large as in that hybrid, but they are of an exceptionally dark blue colour. Shown by Messrs. ROBERT VEITCH AND SON.

Crinum concinnum.—The name is provisional pending fuller examination. A large pot containing a single bulb was shown. It bore large, spreading leaves and a spike of flowers having long segments coloured reddish-purple on the outsides and white with a longitudinal bar of the same colour inside. Shown by Major ALBERT PAM, Wormley Bury, Broxbourne.

Escallonia Iveyi.—This appears to be a natural hybrid between E. montevidensis and E. exoniensis, for Mr. Peter C. M. Veitch told us that it was found growing in a Cornish garden between bushes of these two Escallonias, and that there were no others in the garden. It is a valuable addition to the summer-flowering shrubs and, so far, has proved to be quite hardy. It is of vigorous, yet sturdy, habit, and bears abundant panicles of white flowers, nearly as large as those of E. macrantha, which have a faint purplish flushing at the junction with the calyx. Shown by Messrs. ROBERT VEITCH AND SON.

Phlox Royal Purple.—A sturdy herbaceous variety bearing medium-sized heads of purple flowers. Shown by Hon. Vicary Gibbs, Aldenham House, Elstree.

Phygelius capensis coccinea.—A robust variety of the Cape Fig Wort, which bears reddish salmon-coloured flowers. Shown by Mr. Clarence Elliott.

Scabiosa anthemifolia rosea, T.Hay's variety.—A graceful rosy-mauve variety of the European species which, according to the *Index Kewensis*, is correctly, S. Columbaria. Shown by Messrs. Isaac House and Son.

Groups.

On a large floor space, Mr. H. J. Jones displayed a valuable collection of the best herbaceous Phloxes. Amongst the many varieties we especially admired Newbird, of rich, rosy-crimson colour; Mrs. Rutgers, a large truss of light rosy-lilac colour with a darker centre; C. Edwards, rich salmon-pink; Le Madhi, one of the best purples; Exquisite, large white flowers with a rosy eye; Imperator, rich crimson; and F. A. Buckner, a large truss of pure white flowers.

A very interesting exhibit of aquatic and bog plants was made by Mr. Amos Perry. In addition to flowers of some of the best Nymphaes, such as he showed a fortnight ago, he had bowls of "Water Weeds," such as Elodea callitrichoides, Ludwigia Mulerttii, and Cabomba viridiflora. Equally interesting and of more floral value were the pans of Eichhornia, Villarsia and Calla of various species. The background of this uncommon exhibit was composed of growing plants of various rushes and reeds of garden value.

An attractive collection of herbaceous Phlox with Gladiolus primulinus, chiefly of salmon shades, was set up by Messrs. Hewitts, Ltd. Mr. H. Hemsley had some excellent new Sidalceas, which he showed under seedling numbers. A collection of annuals, arranged by Messrs. Daniels Bros., included dark blue, white, azure-blue and mauve-rose Larkspurs, large-flowered Godetias and Clarkias. Messrs. B. Ladhams, Ltd., again staged plentiful blooms of Coreopsis auriculata superba and Lavatera Olbia rosea with other hardy flowers. Mr. F. G. Wood included spikes of Liatris pycnostachya with Lythrums and herbaceous Phloxes. Messrs. Isaac House and Son included the new Scabious anthemifolia rosea with good vases of their well-known types.

A well-arranged collection of seasonable border flowers, displayed by the Chalk Hills Nursery Co., included good varieties of herbaceous Phloxes, Anthemis, Gaillardias, Sidalceas and Ryburgh hybrid Poppies. The Misses Hopkins had a collection of useful border flowers. In a neat rock garden, Messrs. R. Tucker and Sons displayed dwarf Campanulas and other alpines. Messrs. M. Prichard and Sons showed alpines in pots, which included Campanulas Hallii, Wockeri, H. B. Loder, Norman Grove and azureum plenum.

In their groups of hardy shrubs, Messrs. L. R. Russell, Ltd., included a good plant of Erythrina crista-galli, and Ceanothus Gloire de Versailles, and, in a small rock garden, had examples of Thymus citriodorus fol. argenteum and various Sempervivums. Mr. G. Reuthe showed Crinum Powellii, Lilium Sulphur-gale and Parsiflora coerulea in a collection of border plants and alpines.

A very interesting exhibit of uncommon shrubs and plants was set up by Messrs. Robert Veitch and Son. The central place was given to large sprays of the new Escallonia Iveyi, which well illustrated its garden value. There were also examples of Cassia corymbosa, Lagertroemia indica, Feijoa Sellowiana, Lonicera Hildebrandian bearing its very large, deep yellow flowers, and Eugenia apiculata.

A good collection of cut Roses was well staged by Messrs. D. Prior and Son, which included vases of Lady Inchiquin, Golden Emblem, Betty Uprichard, Little Joe and Miss C. E. van Rossem. Messrs. Kelway and Son had a good collection of Gladiolus, in which such Primulinus varieties as Rev. J. Stubbs, a rich orange-scarlet variety which is on trial at Wisley, Golden Girl and Ghost, of pale yellow colour were very prominent. There were also vases of the large-flowered varieties of considerable merit.

Carnations were shown by Messrs. Allwood Bros., who included Wivelsfield Claret, Wivelsfield Apricot, Topsy and Shot Silk. Messrs. Stuart Low and Co. included vases of Brilliant and Lord Lambourne, two varieties of vivid colouring, while Mr. C. Engelmann also had a collection of useful, free-flowering varieties.

A large collection of Cape Pelargoniums in pots was exhibited by the Hon. Vicary Gibbs (gr. Mr. E. Beckett), Aldenham House, Elstree. The best sorts with variegated foliage were Lady Plymouth and Prince of Orange. Amongst those of very "un-Geranium-like" appearance were Pelargonium scabrum, P. tetragonum, P. abrotanifolium and P. artimisifolium. Several plants possessed distinct floral beauty in addition to fragrance in their foliage. The chief were P. Zermattii, P. cuculatum fl. pl., P. Miss Godolphin Osborne and P. albescens.

Fruit and Vegetable Committee.

Present: C. G. A. Nix, Esq. (in the chair), Mr. J. Cheal, Mr. P. C. M. Veitch, Mr. G. F. Tinley, Mr. A. Bullock, Mr. A. Poupart, Mr. J. Wilson, Mr. E. Beckett, Mr. W. H. Divers, Mr. E. A. Bunyard and Mr. A. N. Rawes.

The Bunyard Medal was offered at this meeting for exhibits of Gooseberries shown by amateurs. Only one collection was forthcoming: it was shown by F. C. Stoop, Esq., West Hall, Byfleet (gr. Mr. Carpenter), and included thirty dishes of such well-known sorts as Lancer, Leveller, Careless, Keepsake, Green London, Green Gascoigne, Langley Gage and Ironmonger.

Our readers are reminded that Bunyard Medals are offered for Peaches, Nectarines and Apricots at the meeting on August 10, and for Plums at the meeting on August 24. It is to be hoped that better competitions will result on these dates, for stone fruits are fairly plentiful this season,

Groups.

One of the finest exhibits in the hall was a collection of forty-five dishes of Gooseberries, thirty cordon plants of Gooseberries in pots, and four dishes of Red Currants, shown by Mr. J. C. Allgrove, Middle Green, Langley. This exhibit was noteworthy on account of the fine quality of all the berries, and it was interesting in presenting some of the older varieties which are but little-grown nowadays. The best flavoured varieties were Langley Gage, Warrington, Early Green Hairy, Early Sulphur, Keepsake and Red Champagne, whilst the most prolific cropping sorts were Leveller, Lancer, Broomgirl, Industry, Crown Bob and Keepsake. The varieties Broomgirl, Industry and Keepsake may also be used for dessert purposes, whilst all are excellent for culinary use. Currant La Constante is conspicuous amongst collections for its green foliage, for it is never attacked by red spider. The fruits hang for a long time and are of excellent colour. The bush is a good grower, and in all respects the variety is one of the best Red Currants in cultivation.

Mr. H. Hemsley, Crawley, also showed a small collection of Gooseberries, such as Careless, White Eagle, Whitesmith and the new Cousinss' Seedling, a big golden berry; he also showed a cross between the Gooseberry and Black Currant.

Messrs. Barr and Sons exhibited a splendid collection of vegetables, comprising 150 distinct dishes. This exhibit was exceedingly well staged, and the quality generally was very high, the more notable vegetables being Cauliflowers Autumn Queen and Autumn Mammoth; Carrots Early Nantes, New Intermediate and James's Intermediate; Potatos King Edward, Midlothian Early, Sharpe's Express and Cardinal; Lettuces Green Favourite, Continuity, and Summer White; Cabbages Eclipse and Spring Cutting; Beet Early Red Globe, and Onions Early White and White Italian. A collection of herbs interspersed amongst the other vegetables added further attraction.

ELSTREE AND DISTRICT HORTICULTURAL.

The summer show of the Elstree and District Horticultural Society was held in Aldenham Park, Elstree, on Saturday, the 17th inst. The show was a record in every respect, and this year included exhibits by school children and classes for cooked vegetables, eggs and bottled fruits. The gate receipts amounted to nearly £250, compared with £45 at the initial show in 1909. The outstanding exhibit was a collection of nearly two hundred dishes of vegetables shown by the Hon. Vicary Gibbs (gr. Mr. E. Beckett), which was awarded a Large Gold Medal and a Silver Cup.

Mr. Beckett also exhibited a water garden planted with Nymphaeas, surrounded by rock work in which were planted numerous moisture-loving subjects. The vegetables were of the highest quality and staged so skilfully as to make it as attractive as an exhibit of bright flowers. The new Red Intermediate Carrots, Quite Content and other Peas, yellow and white Cucumbers, Potatos, and Snow Queen and Driancourt Cauliflowers were especially fine, but to enumerate all the subjects included would be to make a list of practically all the vegetables in cultivation.

Gold Medals were also awarded to Messrs. W. H. Cutbush and Son, who filled one end of the larger tent with a collection of hardy plants, including alpines: and to Messrs. Sutton and Sons, Reading, for a magnificent collection of annuals, including Sweet Peas, Sweet Sultans, Godetias, Larkspurs, extraordinarilyfine Scabious and others.

Mr. S. Smith was awarded a Silver-gilt Medal for Cacti, and Silver Medals were awarded to Messrs. Waterer, Sons and Crisp, for hardy plants, and Mrs. Bourne, Garston Manor, Watford (gr. Mr. Baker) for a group of Coleus edged with Torenia Fournieri and Panicum.

In the competitive classes the outstanding features were the Roses and Sweet Peas. There were four exhibits in the class for a collection of Roses arranged on a space of twelve feet by four feet, in which the first prize, including a Silver Challenge Cup, was awarded to Messrs. Chaplin Bros. The exhibit contained several columns which gave it a somewhat heavy appearance, but the blooms were of splendid quality. Baskets of Lady Inchiquin and Lord Charlemont, separated by a column of the golden Mabel Morse, were fine features, and other notable varieties were Los Angeles, Mrs. C. Lamplough and Mrs. Herbert Nash; second, Messrs. Harkness and Co., who had a grand group, but they exposed the staging at either end, thus detracting from what was otherwise the finest collection. In this exhibit a basket of Mabel Morse in the centre, two columns of Ophelia and fine blooms of Mrs. Henry Bowles at either end, with a basket of George Dickson in the foreground, including one bloom of this variety of enormous size and excellent in every respect, were the principal features; third, Messrs. F. Cant and Co.; fourth, Messrs. A. Warner and Son, Colchester.

In the Sweet Pea classes, a Challenge Cup was offered for the premier exhibit of twelve vases, and this was won by Dr. Leggatt (gr. Mr. E. J. Pratt); second, Mr. R. H. Whitehead (gr. Mr. H. Mumms); and third, Mrs. Handscombe (gr. Mr. W. F. Ealey). In a smaller class for Sweet Peas, namely, for six vases, a Silver Challenge Cup was also offered, and this was won by Mr. W. Martineau (gr. Mr. Ball), followed by Mr. G. L. F. Cook (gr. Mr. Fry).

In the vegetable classes a Silver Challenge Cup was won by Mrs. Bourne (gr. Mr. G. Baker). Mr. G. E. Gabain (gr. Mr. J. Paice), who won the cup last year, being placed second.

The success of the exhibition was largely due to the interest and support given by the Hon. Vicary Gibbs, who is President of the Society. He threw his beautiful gardens at Aldenham House open to the inspection of visitors, officiated as a judge and helped in many other ways.

MANCHESTER AND NORTH OF ENGLAND ORCHID,

Friday, June 25.—*Committee Present:* Capt. W. Horridge (in the chair), Messrs. J. B. Adamson, C. Branch, A. Burns, B. Collins, A. Coningsby D. A. Cowan, J. Evans, A. Keeling, D. McLeod E. W. Thompson and H. Arthur (Secretary).

First Class Certificates.

Odontioda Bradshawiae var. Phoenix.—A large flower of good substance; the sepals and petals are scarlet with rose-coloured edges; *Odontoglossum amabile var. King Albert.*—A large, well-shaped flower. From Mrs. P. Smith.

Odontoglossum ornatus var. J. B. Adamson.—A variety with broad sepals and petals heavily blotched with claret-purple; the large, blotched lip has a white frill. From J. B. Adamson, Esq.

Oncidioda Brucaea (*Oncidium Wentworthianum* × *C. Noezliana*).—An interesting, home-raised seedling. The flowers are borne on a long spike; they are similar in shape to those of the Wentworthianum parent, but cinnamon-red in colour. From Mrs. Bruce and Miss Wrigley.

Awards of Merit.

Laelio-Cattleya Fascinator var. Samson: L.-C. Urbania superbiens and *Odontioda Amethyst, Towneley Grove variety.* From J. B. Adamson, Esq.

Miltonia Constance (*Rev. W. Wills* × *Isobel Sander*): *M. Bleuana Bridge Hall variety* (*Bleuana rosca* × *Renie Elizabeth var. Roi des Belges*). From Mrs. Bruce and Miss Wrigley.

Odontoglossum crispum var. Titanic and *O. Margarita West Point variety.* From Mrs. Gratrix.

Odontoglossum eximium var, Distinction (*crispum Solum* × *ardentissimum*). From Mrs. P. Smith.

Odontoglossum Senlac (*Jasper* × *Lambeauianum*).—From the Hon. G. E. Vestey.

Odontioda Chanticleer var. Brilliant.—From Messrs. Keeling and Sons.

Groups.

Silver-gilt Medals were awarded to groups staged by J. B. Adamson, Esq., Blackpool (gr. Mr. R. Taylor); S. Gratrix, Esq., West Point (gr. Mr. C. Branch): and the Hon. G. E. Vestey, Southport (gr. Mr. B. Collins), respectively.

Mrs. Bruce and Miss Wrigley, Bury, (gr. Mr. A. Burns), staged a group to which a Silver Medal was awarded.

A Silver Medal was also awarded to Messrs. Keeling and Sons, Bradford, for a group which included Odontoglossums in variety.

ROYAL CALEDONIAN HORTICULTURAL,

The ordinary monthly meeting of this Society was held at 5, St. Andrew Square, Edinburgh, on July 6, Mr. W. J. Thomson, President, in the chair.

The proceedings were devoted to a discussion of horticultural topics.

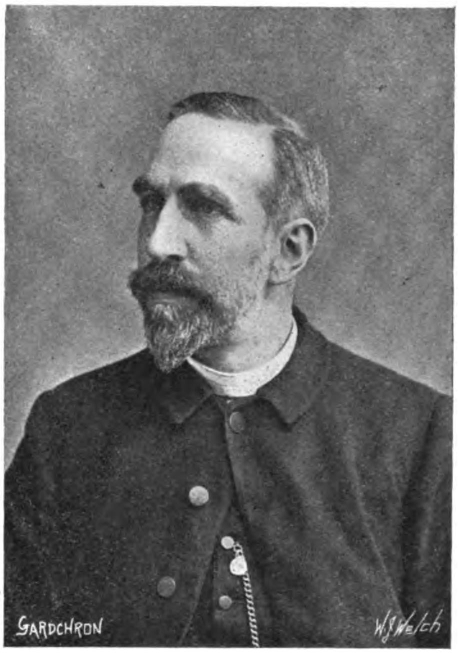
The exhibits were:—Delphiniums, by Messrs. Dobbie and Co., Ltd., Edinburgh (Gold Medal); alpines, by Messrs. Laird and Dickson, Pinkhill, Edinburgh (Silver Medal), and Dracocephalum Isabellae by the same firm (Award of Merit). Mr. D. Armstrong, The Drum, Gilmerton, was awarded a Cultural Certificate for Grapes. The other exhibits were: Calla Pentlandii, by Mr. J. B. Brechin, Edinburgh; Sweet Peas, by Miss Dickson, Edinburgh; Antirrhinums, by Mr. A. Innes, Edinburgh; Apples grown in Tasmania, by Mr. R. L. Scarlett, C.D.A., Inveresk.

On July 16, over sixty members of the Society visited Douglass, East Lothian, on the invitation of Frank Usher, Esq., and, favoured by fine weather, this fine old place was seen under the most favourable conditions. Mr. Usher has made many and great changes, both to the mansion and the grounds, including a new Rose garden, which contains several thousands of up-to-date varieties.

Obituary.

John Benary.—We greatly regret to receive news of the death, on July 20, in his seventy-fourth year, of Herrn John Benary, senior partner in the famous firm of Ernst Benary, Erfurt, Germany. The deceased had been actively connected with the work of the business for fifty-two years, in which he had latterly been assisted by the two junior partners, his son and nephew, Heinrich and Ernst Benary. These two remaining members of the firm will continue to carry on the business on the same lines as heretofore.

Rev. J. H. Pemberton.—It is with the deepest regret we announce the death of the Rev. Joseph Hardwick Pemberton; he died on July 23, at The Round House, Havering-atte-Bower, Romford, Essex, where he had lived for many years. He will be reckoned among the other famous clerics who excelled in Rose growing—Rev. D'Ombrain, Rev. Foster-Mellier and Dean Hole, and it is no exaggeration to say that these four clergymen did more to improve the Rose and make it popular than any other raisers and growers of this flower in Great Britain. Mr. Pemberton was ordained by the Bishop of St. Albans in 1881; from 1880 to 1903 he was curate of Romford, with the care of the Collier Row Mission, and was from 1891 to 1914 diocesan inspector for St. Albans. Several years ago he resigned his curacy to devote himself entirely to the growing of his favourite flower, and he established a very successful Rose business. He was one of the founders of the National Rose Society, and in 1911 was elected President. His work, *Roses, their History, Development and Cultivation*, is one of the most valuable and practical books on the Rose and is regarded as a classic on the subject. He was especially interested in raising varieties of a perpetual-flowering habit, and gained several awards for his novelties. He won more than one thousand prizes for Roses at exhibitions. Mr. Pemberton was held in the highest esteem, for he had a charming personality and a retiring disposition which endeared him to all.



THE LATE REV. J. H. PEMBERTON.

Joseph Ross.—We regret to record the death, at the age of fifty-six, of Mr. Joseph Ross, gardener to Lord Justice Warrington, at Clyffe Hall, Market Lavington. A son of the late Mr. Charles Ross, of Welford Park, Newbury, he always took a keen interest in horticulture. He had been at Clyffe Hall about ten years, previous to which he was for some time at Rush Court, Wallingford, where he had been a staunch supporter of the local horticultural society, and had made a great number of friends. On taking up his residence at Market Lavington, he became keenly interested in the local horticultural activities, and his services as judge were in request at many exhibitions in the district. There was a large attendance at the funeral, which took place on the 20th July.

ANSWERS TO CORRESPONDENTS.

Chrysanthemum Rust.—*G. P.* The leaves are attacked by a fungus known as Chrysanthemum Rust. If badly attacked, burn the plants to prevent the disease spreading to other sorts. If only a few leaves are affected pick them off and spray the plants with a solution of potassium sulphide.

Peach Leaves Diseased.—*J. E. J.* The Peach leaves are, as you suspect, affected with shot-hole disease, caused by the fungus Cercospora circumscissa. Gather and burn all the diseased leaves and spray the trees with self-boiled lime and sulphur compound.

Names of Plants.—*G. P.* The numbers were written in ink. Moisture from the specimens and packing had rendered some of the figures indecipherable: No. 1 is a wireworm, work lime freely in the soil; 2, Begonia carminata; 3, Taxus adpressa; 4, Asplenium bulbiferum; 5, Cupressus pisifera var. plumosa; 6, Cupressus Lawsoniana; 7, Ficus repens; 7 (?), Rhus typhina laciniata; 8, Spiraea Filipendula fl. pl.; 9, Lysimachia punctata; 10, Syringa Emodi; 11, Rhus cotinoides; 12, Alstroemeria peruviana; 12 (?), Osmunda regalis; 13, Taxodium distichum; 14, Pernettya mucronata; 17, Diervilla florida; 18, Cerastium tomentosum. *G. W.* Veronica speciosa var. Manx Queen. *D. L. N.* Probably a seedling Oak.

Tomatos Diseased.—*Church Hill.* The Tomato leaves you send are attacked by Stripe disease. This is a bacterial disease to which soft, rapidly-growing plants are very susceptible. It may usually be corrected by the application of two ounces of sulphate of potash to the square yard, especially if care is taken to grow the plants on the hard side.

Tomatos Failing.—*B. B.* Without examining your plants it is difficult to diagnose the cause of failure. Bad drainage will cause yellowing of the leaves, but as your plants are growing in ordinary garden soil they probably need feeding with a stimulant. You should try top-dressing the soil with a good Tomato fertiliser, and apply a light mulch ofs stable manure after top-dressing.

Tomato Unsatisfactory.—*W. W.* The non-setting of Tomato flowers is usually caused by the soil and air being too dry. You should examine the soil with a fork to make quite certain that the ball of the plant is not dry; see that the soil is kept uniformly moist in future. The plants should be damped overhead in the early stages; this is always helpful to the setting of the flower.

Communications Received.—C. F. C. (Thanks for 2/6 for R.G.O.F. box)—G. S.—J. G. R.—Swansea—F. C.—F. B. K.—C. S.—C.—A. J. B.—F. H. W.—W. S. L.—E. C.—T. J. H.—E. V. H.—F. B. C.—J. P. O'D.—M. L.—O. F. W.—A. O. M.

TRADE NOTE.

Readers requiring information and advice respecting Patents, Trade Marks or Designs, should apply to Messrs. Rayner and Co., Patent Agents, 5, Chancery Lane, London, who will give free advice to readers mentioning this paper.

MARKETS.

COVENT GARDEN, Tuesday, July 27, 1926.

Plants in Pots, etc.: Average Wholesale Prices.

(All 48's except where otherwise stated).

	s. d. s. d.
Adiantum cuneatum per doz. ...	10 0-12 0
—elegans ...	12 0-15 0
Aralia Sieboldii	9 0-10 0
Araucarias, per doz.	30 0-42 0
Asparagus plumosus	12 0-18 0
—Sprengeri ...	12 0-18 0
Aspidistra, green	36 0-60 0
Asplenium, doz.	12 0-18 0
—32's	24 0-30 0
—nidus	12 0-15 0
Cacti, per tray —12's, 15's ...	5 0—7 0
Crassulas, 48's, per doz. ...	24 0-30 0
Crotons, per doz.	30 0-45 0
Cyrtomium ...	10 0-25 0
Fuchsias, 48's per doz. ...	12 0-18 0
Heliotrope, 48's, per doz. ...	12 0-15 0

	s. d. s. d.
Hydrangeas, pink, 48's, per doz.	24 0-30 0
—white, 48's per doz.	24 0-27 0
—blue, 48's, per doz.	24 0-36 0
Ivy Geranium, 48's, per doz.	15 0-18 0
—60's per doz. ...	9 0-12 0
Lilium longiflorum (Harrissii) 48's, 32's, per doz.	21 0-30 0
Marguerites, 48's per doz. ...	18 0-21 0
Nephrolepsis in variety ...	12 0-18 0
—32's	24 0-36 0
Palms, Kentia	30 0-48 0
—60's	15 0-18 0
Pteris, in variety	10 0-15 0
—large, 60's ...	5 0—6 0
—small	4 0—5 0
—72's, per tray of 15's	2 6—3 0
Roses, Polyantha 48's, per. doz.	24 0-30 0

Cut Flowers, etc.: Average Wholesale Prices.

	s. d. s. d.
Achillea The Pearl per doz. bun.	3 0—4 0
Adiantum decorum, doz. bun.	8 0-10 0
cuneatum, per doz. bun. ...	6 0—8 0
Alstroemeria, per doz. bun.	6 0—8 0
Asparagus plumosus, per bun., long trails, 6's	2 0—3 0
med. sprays	1 6—2 6
short	0 9—1 3
— Sprengeri, bun. long sprays...	1 6—2 0
med. ,, ...	1 0—1 6
short ,, ...	0 4—1 0
Asters, white per doz. bun. ...	6 0-12 0
Carnations, per doz. blooms .	1 0—2 6
Chrysanthemums, white, per doz.	2 6—3 0
—bronze ,,	2 0—2 6
— ,, per doz. bun.	9 0—12 9
Clarkia, per doz. bun.	4 0—5 0
Coreopsis, per doz. bun.... ...	1 0—1 6
Cornflower, pink, per doz. bun.	1 0—1 6
—blue, per doz. bun.	1 3—1 6
Croton leaves per doz. ...	1 9—2 6
Daisy, Giant White per doz. bun....	2 6—3 0
Eryngium, per doz. bun. ...	6 0—8 0
Fern, French, per doz. bun.	10 0-12 0
Forget-me-not, per doz. bun.	6 0—8 0
Gaillardias, per doz. bun. ...	2 6—3 0
Gardenias, 12's, 18's, per box	6 0—9 0
Gladiolus, The Bride, per doz. bun.	8 0-12 0
—primulinus 6's, per doz. bun....	9 0-12 0
—various Giant varieties, per doz. spikes ...	2 0—3 0
Godetia, per doz. bun.	4 0—5 0

	s. d. s. d.
Gypsophila elegans ...	5 0—6 0
—paniculata ...	8 0-10 0
Heather, white, per doz. bun.	10 0-12 0
pink, per doz. bun.	9 0-12 0
Lapageria, white, per doz. blooms	2 6—3 6
Lilium longiflorum long, per doz.	2 0—2 6
Lilium speciosum rubrum, long, per doz. blooms ...	2 6—3 0
—short doz. blooms ...	1 0—1 6
—lancifolium album, per doz. blooms ...	1 0—2 6
Lily-of-the-Valley, per doz. bun.	18 0-20 0
Montbretia, per doz. bun.	8 0—9 0
Orchids, per doz. —Cattleyas ...	30 0-36 0
Roses, per doz. blooms—	
—Madame Abel Chatenay ...	1 6—2 0
—Molly Sharman Crawford	1 6—2 6
—Richmond ...	1 6—2 6
—Columbia ...	2 0—2 6
—Golden Ophelia	1 6—2 6
—Sunburst ...	1 6—2 6
—Mrs. Aaron Ward	1 6—2 0
—Madame Butterfly	2 0—3 0
Scabiosa caucasica, per doz. bun....	4 0—5 0
Smilax, per doz. trails	4 0—5 0
Statice latifolia, per doz. bun	10 0-12 0
—sinuata per doz. bun. ...	6 0—9 0
—Suworowii ...	9 0-12 0
Stephanotis, per 72 pips... ...	3 0—3 6
Stock, double white, per doz. bun.	4 0—6 0
Sultan, white per doz. bun.	4 0—6 0
—yellow, per doz. bun...	6 0—8 0
—mauve, per doz. bun.	4 0—6 0
Sweet Peas, per doz. bun. ...	4 0—9 0
Violas	1 0—1 6

Remarks.—Supplies, generally, exceeded the demand during the past week, for, with the exception of Asters, practically all outdoor blooms are in excess. Asters are becoming more plentiful daily and of better quality. Lilium longiflorum and white and pink-flowered L. lancifolium are much improved in quality. Lily-of-the-Valley is again arriving in much larger quantities. Chrysanthemums Mrs. J. Pearson and Sanctity are gradually improving in quality. There has been an excessive supply of Carnations during the past few days and large quantities have to be cleared at very low prices. Prices ranged from 9d. to 3/6 per dozen blooms, special varieties having retained their full value. Roses are also in excessive supply, but there is still a shortage of good red blooms. Business is somewhat slow in this department, and likely to continue so for a few weeks. In addition to the usual foliage plants, the following flowering plants are on offer:—Crassulas, white and pink Hydrangeas, Lilium longiflorum (Harrisii), L. lancifolium album and L. l. rubrum, Verbena Miss Willmot, white Marguerites in good condition, and Viscarias. A few pots of Chrysanthemums, blue Campanulas and Hydrangea paniculata were on offer to-day.

Fruit: Average Wholesale Prices.

	s. d. s. d.
Apples, New Zealand—	
—Sturmer ...	10 0-11 0
—Newtown ...	— 10 0
—Dunn's Seedling	9 0-10 0
—Statesman ...	9 0-10 0
Apples, Tasmanian	10 0-10 6
Apricots, Spanish per crate ...	3 0—6 0
—French, ...	3 0—6 0
Bananas	14 0-22 6
Black Currants—	
—English, per lb.	0 9—1 0
Cherries (English)—	
—Black, per ½ sieve	10 0-18 0
—White, per ½ sieve	4 0-10 0
—Napoleon ...	6 0-26 0
Currants, Red per lb.	0 3½-0 6
Figs, forced, per doz.	4 0-10 0
Gages, Spanish, per ½ sieve ...	8 0-14 0
—French	4 6—6 0
Gooseberries—	
—Kent, halves—	
—Dessert	4 0—7 0
—Cooking	2 0—3 0
—Leveller, per lb.	0 4—1 0
Grape Fruit ...	50 0-52 6

	s. d. s. d.
Grapes, English Black Hamburgh	1 2—2 0
—Gros Colmar	2 0—2 6
—Alicante ...	1 3—2 0
—Muscat ...	2 6—4 6
Lemons, Messina, per case ...	15 0-20 0
—Naples, box	15 0-20 0
Melons—	
—Forced Guernsey special ...	2 0—5 0
—Canteloup ...	2 0—6 0
—others	2 0—4 0
Oranges—	
—Californian ...	20 0-22 0
Peaches, Belgian, per doz. ...	3 0—6 0
— English, per doz.	4 0-12 0
—Italian, per tray	2 0—3 6
Pines...	2 0—4 0
Plums, Spanish, per crate ...	5 0—8 0
—French ...	4 0—6 0
—French, per ½ sieve	4 0—6 0
—Royal	8 0-10 0
Raspberries—	
—Special dessert, per lb.	1 3—1 6
—Other, per 4-lb. chip	2 0—3 0

Remarks.—Supplies have been heavy in most departments of the market, and a considerable amount of business is being transacted. Prices in general, however, are on a low level, and the effects of the strike is now taking its toll. English Tomatos are meeting the competition of Dutch Tomatos and are a quiet trade with lower prices. Cucumbers are plentiful and comparatively cheap. Grapes are quoted cheaper due to the arrival of large quantities of Belgian Grapes to this country. Peaches and Nectarines are selling fairly well, but Melons are cheaper. A few sorts of English Apples are now available, including Early Victoria, Early Julian, Gladstone and Beauty of Bath, and they are selling freely. Early Rivers' Plums from home-growers are selling well, notwithstanding the cheapness of French Plums. A few Black Currants are still available and sell well. Outdoor French Beans are plentiful and cheap. Peas, unless of good quality, are not wanted. Mushrooms, after a time of high prices, are now cheaper. Green vegetables are plentiful, but a quiet trade. Potatos, although offered at slightly cheaper prices, are a slightly better trade.

GLASGOW.

The fair holiday week is usually the quietest period of the year in the market and last week was no exception to the rule, business being on a restricted scale and confined chiefly, to soft fruits. Strawberries are nearing the end of their season, and berries for preserving represented a large proportion of the daily consignments from local growers. Dessert fruits ranged from 6d. to 8d., and jam berries from 2½d. to 4½d. Good Raspberries were worth 1/- and 1/1 per lb, and ordinary, 5d. to 6d.; Black Currants are still dear at 1/2 to 1/4 per lb for Scotch; 1/- to 1/1 for English; and 11d. for Norwegian; while Red Currants made 6d. to 8d. and White Currants, 5d. to 6d. The prices for green Gooseberries fluctuated between 1½d. and 2½d. per lb, and Yellow sorts made 3d. and 4d. Cherry Plums averaged 10/- per half-bushel. Valencia Oranges advanced to 20/- per case. South African Oranges ranged from 19/- to 22/-; and Sunkist, from 27/- to 30/-. Australian Apples are now finished, but New Zealand brands sold at 9/- to 12/-. Black Grapes were cheap at 1/4 to 1/6 per lb.

There was a comparatively small demand for cut flowers, and prices again reached low levels. Sweet Peas in particular were not easily disposed of, and salesmen willingly accepted 1d. to 3d. per bunch for good blooms. Gladioli varied from 1/6 to 4/- per dozen spikes; Carnations made 1/- to 2/6; Roses, 2/- to 3/-; Gypsophila, 1/6 to 2/6 per dozen bunches. Morning Star, 9d. to 1/6 per box; Marguerites, 1½d. to 3d. per bunch; Erigeron, 2d. to 4d.; Lilium longiflorum (Harrisii), 2/- to 3/-; Smilax, 1/- to 1/6; and Asparagus, 6d. to 1/-.

In the vegetable section Cucumbers advanced to 6/- and 8/- per dozen, and, after realising 8½d. to 10d. during the greater part of the week, Tomatos advanced to 10d. and 1/- per lb. Prices for Lettuces advanced steadily to 6d. to 1/- per dozen; French Beans realised, 1/- to 1/4 per lb; and Cauliflowers, 1/6 to 5/- per dozen.

SCHEDULES RECEIVED.

Gloucestershire Root, Fruit and Grain Society.—Sixty-third annual show to be held at Shire Hall, Gloucester, on Tuesday, November 9.—Secretary, Mr. S. S. Starr, 11, London Road, Gloucester.

Bangor Horticultural Society.—Fourth annual show to be held on Wednesday and Thursday, August 18 and 19.—Secretary, Mr. J. C. Moore, 4, College Avenue, Bangor.

Buxton and District Chrysanthemum Society.—Twenty-first annual show to be held on Wednesday, November 17, in the Pavilion Gardens.—Secretary, Mr. A. Nevil, Holker House, Hardwick Mount, Buxton.

NEW HORTICULTURAL INVENTIONS.

Latest Patent Applications.

17,474.—Babbington, C. E.—Gathering device for leaves, grass, etc. July 13.

17,604.—Beales, H. B.—Cover for garden, etc., labels. July 14.

17, 594.—Bonnar, S.—Lawn mowers. July 14.

17,713.—Harrison, T. D.—Root-cutting, etc., machines. July 15.

17,555.—Hawney, J.—Garden rollers. July 13.

Specifications Published.

254,861.—Batt, B. A.—Device for trimming the edges and borders of lawns and the like.

254,077.—Weeks, H. T.—Clip or support for horticultural and other labels.

254,094.—Baker, J. E.—Watering cans.

253,572.—Pease, E. L., and Tyrer, D.—Manufacture of fertilisers.

244,698.—Martin, P.—Lawn mowers.

These particulars of New Patents of interest to readers have been selected from the Official Journal of Patents, and are published by special permission of the Controller of H.M. Stationery Office.

Abstract Published.

Manures. *Patent No.* 252,039.

A new fertiliser has been patented by Mr. W. R. Fielding, of Manor House, Manor Road, Fleetwood, Lancashire. It is formed by treating an organic base with deliquescent fertilising materials, such as potassium carbonate or sodium nitrate, and with an efflorescent substance, such as sodium carbonate, sodium sulphate or alum. Straw, hay, bracken, peat, sawdust, wood-pulp, fish-meal, bone-meal, chaff, hops, sewage sludge or settlings, soil containing organic matter, town refuse and sods are mentioned as suitable bases. The base may be first impregnated in a bath of the efflorescent material and then in a bath of the deliquescent, or both substances may be dissolved in a single bath. The efflorescent and deliquescent substances may also be added to the base in solid form. Other materials may be added to make up for deficiencies of clay, calcium or phosphate in the soil.

Printed copies of the full Published Specifications may be obtained from the Patent Office, 25, Southampton Buildings, London, W.C.2, at the uniform price of 1s. each.

TRADE MARKS.

This list of Trade Marks of interest to readers has been selected from the Official Trade Marks Journal, and is published by permission of the Controller of H.M. Stationery Office.

VAPEX.

468,059.—Chemical substances used for Agricultural and Horticultural Purposes.—Thomas Kerfoot and Co., Ltd., Bardsley Vale Mills, Oldham Road, Bardsley, Lancashire. July 14.

OSTROL.

468,549.—Soil Pest Destroying Preparations.—Australian Alum Co., Ltd., 190, Pitt Street, Sydney, New South Wales, Australia. July 14.

POOMA.

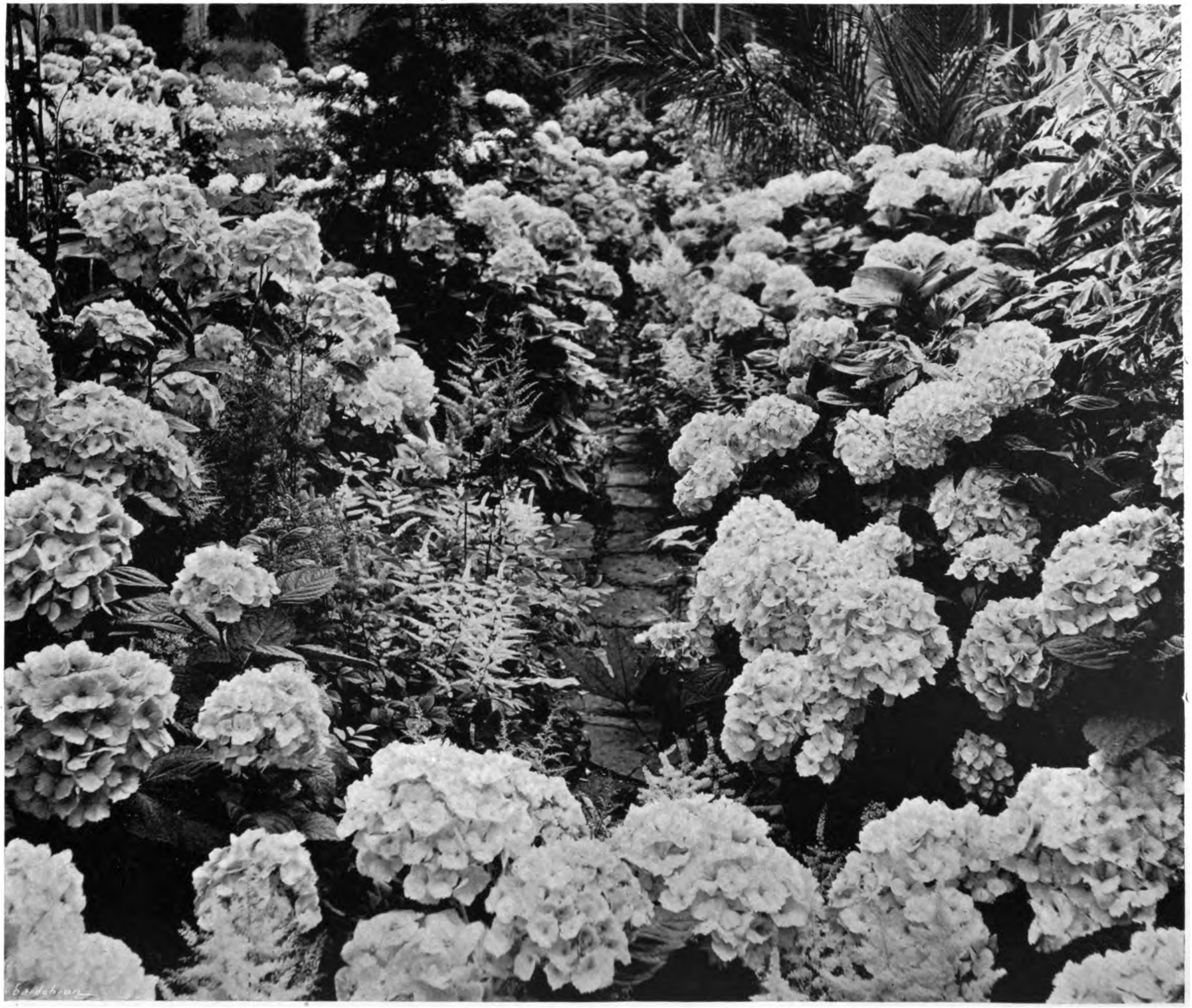
469,788.—Fertilisers, Insecticides and Pest Destroying Preparations.—A. K. T. Bulkley, 9, London Street, London, E.C.3. July 14.

SYNTO.

469,623.—Chemical Substances used for Agricultural and Horticultural Purposes.—Murphy and Son, Ltd., The Cedars, Sheen Lane, Mortlake, London, S.W.14. July 7.

THORACIDE.

466,019.—Fungicides for Horticultural Purposes for Spraying, Painting or Washing Trees.—James H. Dennis and Co., Ltd., 21 to 23a, British Columbia House, 3, Regent Street, London, S.W.1. June 30.



HYDRANGEAS IN THE CONSERVATORY AT HESKETH PARK, SOUTHPORT.

THE
Gardeners' Chronicle

No. 2067.—SATURDAY, AUGUST 7, 1926.

CONTENTS.

Alpine garden—
Meconopsis integrifolia 106
Waldsteinia trifolia 106
Apiary notes 107
Birmingham, Parks, new assistant-superintendent of the ... 103
Box Hill, addition to... 103
Bulb garden—
Allium giganteum 106
Economic plants at Bournemouth ... 102
Florists' flowers—
Chrysanthemums ... 108
Fruit crops, the hardy, 101, 111–117
Fruit garden—
A selection of dessert Plums 117
Raspberries ... 117
"Gardeners' Chronicle" seventy-five years ago 103
Garinish Island, co. Kerry 110
Hardy flower border—
Anemone japonica 106
Monarda didyma ... 107
Hydrangeas at Southport 101
Indoor plants—
Clarkias for winter decoration ... 109
Kew Guild Annual Meeting 102
Linnaeus, portrait of, for the British Museum 103
Oak, an epidemic disease of the 106
Orchid notes and gleanings—
Dendrobium pendulum 109
Parks and gardens, public 108
Plants new or noteworthy—
Sabbatia campestris 107
Trichostema lanatum 107
Potato, intervarietal differences in the ... 108
Potato trials, Scottish 101
Smith, Mr. Joseph ... 102
Societies—
Badsey Flower Show 120
Bermondsey and Rotherhithe Hort. 119
Dumbartonshire Sweet Pea ... 118
Falkirk Rose ... 119
Harrogate ... 119
Moray Field Club ... 119
Saffron Walden ... 119
Trees and Shrubs—
Propagating shrubs from cuttings ... 105
Vegetable garden—
Parsley 117
Week's work, the ... 104

ILLUSTRATIONS.

Escallonia Iveyi 105
Rose Bedford Crimson 110
Scabiosa anthemifolia rosea, T. Hay's variety ... 103
Smith, Mr. Joseph, portrait of 102
Sabbatia campestris 107
Sophro-Laelio-Cattleya Prudence 109

SUPPLEMENT PLATE.

Hydrangeas in the Conservatory, Hesketh Park, Southport

Average Mean Temperature for the ensuing week deduced from observations during the last fifty years at Greenwich 62·4°.

Actual Temperature—
The Gardeners' Chronicle Office, 5, Tavistock Street, Covent Garden, London, Wednesday, August 4, 10 a.m. Bar. 30·4. Temp. 66°. Weather, Fine.

The Hardy Fruit Crops.

A close study of the hardy fruit crops in this country over a number of years proves that promise is not always followed by fulfilment, indeed, more often than not the greater the profusion of blossom the more meagre the crops. This is certainly the case with the majority of fruits this year, for rarely have fruit trees and bushes of all kinds blossomed more profusely than they did this spring, making the fruit gardens and orchards, as one of our correspondents put it, "as though covered with snow." What effect a superabundance of blossom has upon the fruit crops it is hard to say, although many experienced growers contend that only when flowers are vigorous do they set fruits and that when trees are crowded with blossom the individual flowers lack virility. Yet this cannot be the sole cause of the deficiency, for such kinds of fruits as blossomed before the late frosts occurred are cropping fairly satisfactorily, whereas the later flowering ones have no crops worth mentioning. Unfortunately the Apple crop, which is the most important of all, is the most unsatisfactory and the reason is not far to seek and may be summed up in two words—the weather. The Apple may be said to take third place in the succession of blooming, being preceded first by stone fruits and following just after the Pear, both of which were out and over before the time of the Apple, when the weather turned unpropitious, with the result that we have one of the worst Apple crops on record. The Pear trees came into blossom when the weather conditions were ideal, a bountiful crop set and although the weather changed later, causing many of the fruits to drop, the Pear crop is one of the best of the season. It would be interesting to know if those few varieties of Apples which many report as bearing good or fair crops are early bloomers or whether they blossomed sparsely with flowers of extra vigour. Frosts occurred so late as June, accompanied with keen winds, generally from the north-east, the nights being unusually cold, and the weather was cold, damp and sunless, the rainfall being in excess of the average for the second quarter of the year, April-June. The first twenty days of May were unusually cold and only on four of these days did the temperature exceed 60°, the highest day temperature being but 63°. June was likewise cold, no fewer than twenty-two days in that month having a temperature below the average. This unfavourable weather had also a bearing on the quantity and quality of other fruits, notably the Cherry, Black Currant and Strawberry. Many Cherries dropped at the stoning period, while Black Currants had their tender young foliage seared and stunted by the bad weather, and to add to the trouble the bushes were crippled by an unusually severe infestation of aphis, this being often known to occur when growth is feeble and attributed by the ignorant to the east wind. So often does this occur when growth lags in spring it would almost seem that the spread of aphides is favoured by dull, damp, cold weather, for not only did Currants suffer but the pests were also very numerous on Cherries, Plums, Roses, and other crops. The growth of Strawberries in spring was slow and many of the earlier flowers were weak, the crop in some cases being only one-tenth of the normal, and many report that their berries lacked flavour and were of poor quality generally. A study of the tables compiled from the returns furnished by correspondents (see pp. 111—117) shows that the very worst crops are Apples, Cherries, Apricots and Strawberries. Of 215 returns for Apples no fewer than 168 report an undercrop with 43 of average yield and only 4 above the average. Pears, as stated above, are a very satisfactory crop, so many as 112 reporting an average yield, 26 a crop exceeding the average and 76 a yield below the normal. Plums also are good in some districts, but it will be seen that nearly as many of our correspondents have an under crop as those with an average yield, the figures being 92 and 93 respectively, whilst only 28 of 213 returns report a crop above the normal. Cherries are very disappointing owing to the fruits dropping, for there are no fewer than 116 deficient crops out of a return from 210 growers, with 77 of average yield and only 17 over. Peaches are as good as in most years, indeed, considering the unsatisfactory weather, it is surprising there are so many gardens with an average crop of this fruit, the figures being 87 average, 20 over and 42 under. Apricots, always an uncertain crop, are not exceptionally plentiful seeing that there are only 45 returns of average yield and so many as 62 under the average. Small fruits are indicative of the untoward spring, for this season they are much down compared with the splendid reports our correspondents usually give year after year of the bumper crops of such kinds as Currants, Gooseberries, Raspberries, etc. It is many seasons since so many as 47 growers reported an under yield in this section and 44 above the average. Nuts are only grown in certain districts, but the few returns for this crop point to a fair yield, as many growers having excessive crops as those with a deficiency.

Hydrangeas at Southport.—Although Hydrangeas have been popular and effective garden plants over a long period of years, their popularity has never been so great as at the present time, especially for greenhouse and conservatory decoration. Thanks to continental raisers, the colour range of Hydrangeas has been increased, while the form of the individual "pip" has been varied, some varieties showing a deeply fringed margin. At the larger spring and summer exhibitions throughout this country and on the continent, Hydrangeas are prominent features and in many public parks there are annual displays of these useful subjects. Our Supplementary Plate shows a view in the Conservatory at Hesketh Park, Southport, in May last, when Mr. W. Clark, the Parks Superintendent, provided a most effective and attractively arranged display of Hydrangeas in great variety.

Scotch Potato Trials.—A representative company interested in the growing of Potatos, met at East Craigs, near Edinburgh, on Wednesday, July 28, by invitation of the Board of Agriculture for Scotland, for the purpose of inspecting the seedlings under trial at the experimental station. Three kinds of plots are used in the trials, viz., check plots, control plots and trial plots. Every alternative plot is a check plot which provides a basis for the adjustment of the yields of the control plots and trial plots, and is also a definite indication of the variability of the soil. The variety selected for planting the check plots is Great Scot, because healthy stocks are always available and uniformity can be relied on. Control plots are planted in quadruplicate and serve as a basis of comparison for the trial varieties sent in for registration and which have been presumably recommended by the Synonyms Committee. During early winter twelve tons of farmyard manure per acre were applied, while eight hundredweights per acre of artificial Potato manure were applied in the drills at planting time. Each plot contains thirty-nine tubers spaced out fifteen inches apart in drills two-and-a-quarter feet apart, and as the yield of plants next to the paths is abnormal the tubers at each end of the drills are discarded before lifting, leaving thirty-five tubers to the drill to be used. Stocks of commercial varieties are tested with the view to registration. In the first year the seedlings are tested for Wart Disease and on the results depend their inclusion in subsequent trials. The best twenty varieties in the second-year tests are those distributed over the other three centres in Scotland for final trial in the third year, and registration depends on the reports received from these stations. In welcoming the visitors Sir Robert Greig, Chairman of the Board, commented on the increasing importance of pure stocks and mentioned that over 4,000 growers in Scotland had made application for the certification of their crops, and as this would mean the examination of 54,000 acres of growing Potatos, the Board had employed a staff of between sixty and seventy inspectors who had qualified by examination after a course of instruction. The demonstrations were conducted by Mr. Thomas Anderson, Director of Seed-testing, and his assistant, Mr. Millar, who explained many interesting, features of the different seedlings. Bolting it was stated, was a characteristic of the Duke of York variety which, like Golden Wonder, was seldom free from Mosaic Disease. Majestic degenerates rapidly, and at present there is not a good stock in the country. According to Mr. Anderson the only way to preserve this variety from extinction was to select healthy plants and plant out the tubers with Turnips or other crop in the following year at a distance of twenty yards between each lot, in order to lessen the danger from the spread of disease by insects; only those lots in which no diseased plants are found should be kept, and larger stocks may then be propagated. This is known as the tuber-unit system and the fact was emphasised that it had been adopted in Holland, which was the only country where the Duke of York variety was free from Mosaic. It was, however, a costly proposition and he placed the production of the first hundredweight of Potatos at £500. King Edward and Up-to-Date stood up well in Scotland, but some plants of the latter variety bore evidence of crinkle. A bad stock of Kerr's Pink is not often seen and when affected by Mosaic it is not so bad as in other varieties. As regards Arran Consul, which was the first variety to be registered by the Board, the crop was very good at the early season of the year and it was believed to be a Potato that resisted blight better than any other in the market. In this connection it was remarked that this was going to be a very bad year for blight. As usual a large proportion of the new varieties —thirty-two out of ninety-six—in the first year's trials were simply old varieties re-named. Mr. Donald McKelvie, Lamlash, was represented by twenty-six varieties, and interest centred chiefly in the Epicure seedlings which were new and distinct. One of the roots contained fifteen tubers of a good size. Other promising seedlings came from Messrs. McGill and Smith, Ayr; A. McAllister, Dumfries; W. Scorgie, Stranraer, and G. H. Young, Meigle. Only four varieties figured in the third-year test. A Majestic seedling raised by Messrs. Dobbie and Co. is a very attractive variety, and although it suffers in comparison with others in respect of yield, it stands a good chance of registration. Mr. McKelvie was represented by an Epicure seedling and a British Queen seedling, of which the former was outstanding. It is a big cropper and its future success depends largely on the present test which will determine whether it can be grown as early as Epicure. The latter has the reputation of being the largest cropper in the trials, but its defects are eyes as deep as Kerr's Pink and quality which is inferior to British Queen and Great Scot. The remaining variety is a Field-Marshal seedling from Messrs. McGill and Smith. The haulm is healthy and the tubers sound, but the plant has the fault of yielding too many seed-sized tubers in proportion to the number of wares, and it will need to do better than last year to qualify for registration.

Acquisition of New Forestry Land in Scotland.—The Forestry Commissioners have just completed the purchase of another fine stretch of forestry land. It is on the estate of Pitfour, in the Buchan district of Aberdeenshire, and amounts to 1,200 acres. The purchase also includes forty-five acres of grass parks, which the Commissioners intend to utilise for forestry purposes. The area consists of the following: White Crow Wood, 510 acres cleared, and sixty-six acres already planted; Shelters Wood, fifty acres planted, and thirty-nine acres cleared; Drinnies Wood, fifty acres planted, 105 acres to be cleared; Louden Wood, 275 acres to be cleared, and ten acres planted; Saplon Brae Wood, forty-one acres to be cleared. Bruxie Wood ninety-four acres to be cleared. The land mentioned to be cleared is covered by Beech, while the portions described as planted are all under Fir, which will be allowed to grow to maturity. Messrs. Bisset and Co., timber merchants, Aberdeen, have bought practically all the standing timber, and have undertaken to have the whole cleared off within the next six years. One belt of timber, however, is to be retained to provide shelter for the young trees the Commissioners intend to plant. Once the scheme is thoroughly under way, the Commissioners will possess another fine stretch of State woodland producing a rotation of crops of commercial timber.

Mr. Joseph Smith.—It is with very great pleasure we publish the portrait of Mr. Joseph Smith, who has been appointed to the position of Superintendent of the Public Parks and Gardens of Birmingham, in succession to Mr. W. H. Morter who resigned recently owing to ill-health. Mr. Smith is the youngest son of the late Mr. John Smith of the Royal Nurseries, Windsor, and it was under his father that he commenced his horticultural career, starting with a commercial training that has proved extremely useful during his later years. When nineteen years of age he became journeyman in the gardens at Trentham Hall, Staffordshire, the seat of the Duke of Northumberland, a garden having a world-wide reputation for its horticultural successes, and as a first-class establishment for the education of young gardeners. From Trentham Mr. Smith moved to Waddesdon Manor, an equally famous establishment, belonging to the Rothschild family. He subsequently obtained a position at Blenheim Palace, the seat of the Duke of Marlborough, and afterwards served with Messrs. Wills and Segar of South Kensington, where he obtained wide experience in the art of floral decoration. As a result of his skill he was offered a position in the Royal Gardens, Sandringham, and while there had charge of the decorative work in connection with York Cottage. His services as a decorator were so greatly appreciated that he became the recipient of many presents from members of the Royal family, including the late King Edward VII, the late Queen Alexandra, and their Majesties Queen Mary and King George; on leaving Sandringham Mr. Smith was presented by the King with a very beautiful scarf pin. On January 1, 1912, Mr. Smith commenced service in the Birmingham City Parks Department, being appointed to the King's Heath Park, King's Heath. Two years later, in addition to his park duties he was chosen as horticultural advisor in connection with the allotment movement for the Northern and Eastern sides of the city, where his services were recognised by marks of appreciation from numerous leading business firms, including Messrs. Vickers, Ltd., Metropolitan Carriage Works, Birmingham Gas Works, the B. S. A. Factory, the Austin Works, and Messrs. Cadbury. Mr. Smith's appointment to the post of General Superintendent of the Parks and Cemeteries of the City of Birmingham, was made on Thursday, July 29, and we are sure that with his long and varied experience he will fulfil the duties of that position to the satisfaction of the City Council and the people of Birmingham.

MR. JOSEPH SMITH.

New Recreation Ground at Whyteleaf, Surrey.—An interesting function took place at Whyteleaf, Surrey, on August Bank Holiday, when Sir William and Lady Jones opened a new public recreation ground which has been provided entirely by local effort. The new ground is thirteen-and-a-half acres in extent, and since the idea of acquiring it was promoted eighteen months ago, the villagers and other residents have, by contributions and various enterprises, raised £2,500, so that the ground was opened entirely free from debt.

Kew Guild Annual Meeting.—For some reason, not readily apparent, the Committee of the Kew Guild selected for the postponed Annual General Meeting a date which proved inconvenient for themselves and for the general members. On a Saturday evening, and especially the Saturday next before a Bank Holiday, and in the height of the summer season, a large attendance could scarcely be expected at any annual meeting, so there was a very small attendance at the Lecture Room, Royal Botanic Gardens, Kew, under the chairmanship of Mr. W. Dallimore, the retiring president, on Saturday, July 31 last. Amongst the dozen or so members present were Major T. F. Chipp, M.C., Mr. J. Weathers, Mr. A. E. P. Griessen (India) Mr. J. H. Holland, Mr. A. Osborn, Mr. T. W. Taylor, Mr. H. G. King, and Mr. A. C. Bartlett. The business was of a formal character and consisted principally of adopting the annual report and balance sheet which had been circulated amongst the Guild members. Mr. J. Weathers, who proposed the adoption of the report and balance sheet, remarked on the smallness of the receipts as subscriptions for the current year, and then discussed the Education Fund which, he said, was evidently going to be a disappointing failure and he could not see the slightest prospect of the anticipated sum of money being raised. Mr. Weathers expressed the opinion that it would be best to drop the original idea, invest the monies received, and use the interest to provide books as prizes to the student-gardeners. This could be termed the Nicholson-Watson Memorial and so would keep alive interest in these Old Kewites. Mr. Dallimore remarked that Mr. Weathers's suggestion was, in effect, the original intention regarding the Fund. In view of the small attendance it was decided to postpone the matter to the next Annual General Meeting.

Royal Caledonian Horticultural Society.—A party of seventy members of the Royal Caledonian Horticultural Society recently visited Dunglass, near Cockburnspath, on the invitation of Mr. and Mrs. Usher, the proprietors. The party were met by Mr. and Mrs. Usher and were shown over the extensive Rose gardens where Roses were seen in excellent condition, although the district had been visited by a very violent thunderstorm the preceding afternoon. A great deal of interest was taken in the herbaceous borders, which showed evidence of careful cultivation. The party afterwards visited other parts of the grounds which are well timbered. Mr. and Mrs. Usher very hospitably entertained the members and were cordially thanked by the Society's President, Mr. W. J. Thomson.

Economic Plants at Bournemouth.—Dr. J. B. Hurry, of Heathlands, Bournemouth, has presented the Bournemouth Corporation with a large collection of economic plants which is being housed at the King's Park Nurseries, Boscombe, pending the provision of a suitable place for it. A few days ago the collection was inspected by the members of the Bournemouth Natural Science Society, when Dr. Hurry and Mr. H. Backhouse acted as guides and explained the various kinds of food, clothing, dyes and drugs produced by the plants.

In acknowledging the vote of thanks for his kindness and generosity, Dr. Hurry expressed the hope that Bournemouth might one day have a museum of economic botany.

Addition to the Box Hill Domain.—On Saturday, July 31, Lord Cave received on behalf of the National Trust the title deeds of White Hill and Cockshott Wood, comprising some eighty-five acres of land lying to the north of Box Hill, Surrey, and which have been purchased by the Box Hill Management Committee. This recent acquisition completes the work so generously begun by Mr. Leopold Salomons when he presented 230 acres to be perserved to the public for ever. This preserves the fine view from Box Hill to the north, prevents the land for ever from coming into the hands of the builder, and now brings the Box Hill domain up to 650 acres of beautiful woodland, heath and meadow for the enjoyment of the public.

Legacy to a Gardener.—Mr, Hugh Andrews, D.L., of Toddington Manor, Gloucester, who died on May 25, bequeathed £200 to Mr, John R. Tooley, who has been his head gardener and superintendent of his fruit plantations for a long number of years.

Botanical Appointment.—Dr. W. Robinson, senior lecturer in Botany at Manchester University, has been appointed to the Chair in Botany in University College, Aberystwyth, in succession to Professor Lloyd Williams, who retires under the age limit in September. Dr. Robinson, who is a native of Hull, is a graduate of the University of London and has been connected with the Manchester University since 1912, first as a research student and then as a lecturer in the department of Botany. Dr. Robinson's researches have been mainly in the domain of plant diseases and he has published papers on Puccinia malvacearum and on "Black Neck," or Wilt Disease of Asters. Latterly he has been engaged in researches on bacterial diseases of the Cotton Plant. Dr. Robinson has, however, wide botanical interests and published a paper a year ago on "Doubling in the flowers of Cardamine pratensis." He is an able lecturer and has given several courses of useful lectures to gardeners and allotment holders, and is joint author of a book on "Plants in Health and Disease," published by the Manchester University Press.

Portrait of Linnaeus for the British Museum.—We learn that Lord Dillon has presented the British Museum with a rare engraving from a portrait of Linnaeus, which represents the great botanist and naturalist in Lapland costume such as he wore during his tour through Lapland made in 1732 on behalf of the Swedish Government. The donor is one of the Trustees of the British Museum.

New Assistant Superintendent of the Birmingham Parks.—Mr. William Morrison who has had charge of the Summerfield Park, Birmingham, has been appointed Assistant-superintendent of the Birmingham Corporation's Parks and Gardens, in succession to Mr. Joseph Smith, whose appointment as Superintendent is referred to in the previous page. Before coming to Birmingham, in 1920 Mr. Morrison was for ten years gardener to the Marquis of Anglesey at Beaudesert, and was employed previously in the gardens at Lampton Castle and at Douglas Castle.

Berberis as an Opium Antidote.—It has been found that Berberis vulgaris has the properties of an anti-opium plant. Berberine and an extract of the Berberis root have been successfully employed to counteract the opium and morphine habit, while with opium smokers a rapid cure can be effected with smaller doses than are required for the injection craving.

Royal Horticultural Society's Amateur Vegetable Show.—The schedule of the special Amateur's Vegetable Competition, under the auspices of the Royal Horticultural Society, will be held in the Royal Horticultural Hall, Vincent Square, Westminster, on Tuesday, September 7. The competitions are open to all amateurs in Great Britain, Ireland and the Channel Islands. Exhibitors wishing to stage on the occasion of this show groups of flowers, fruits or vegetables not under the schedule, must make application not later than the first post on Wednesday, September 1, and notices will be sent out on that day to inform applicants whether any space is available or not. Copies of the schedule may be obtained on application to The Secretary, R.H.S., Vincent Square, London, S.W.1.

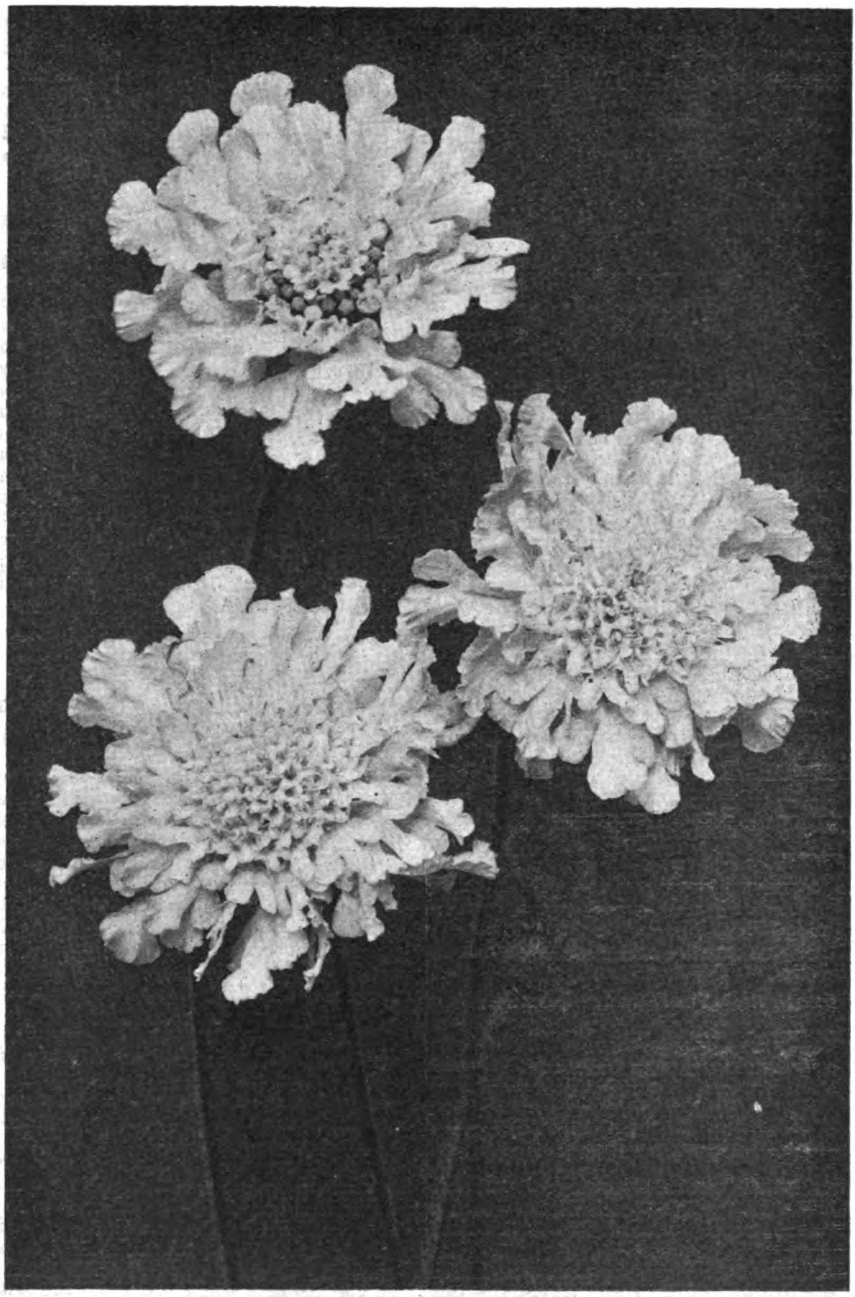


FIG. 54.—SCABIOSA ANTHEMIFOLIA ROSEA, T. HAY'S VARIETY.

R.H.S. Award of Merit, July 27. Colour rosy-mauve. Shown by Messrs. Isaac House and Sons.

(see p. 98)

Appointments for the Ensuing Week.—Monday, August 9: United Horticultural Benefit and Provident Society's meeting; Romsey and District Gardeners' Association's meeting. Tuesday, August 10: Royal Horticultural Society's Committees meet; Clay Cross Horticultural Society's exhibition; Jersey Gardeners' Society's meeting. Wednesday, August 11: Taunton Deane Horticultural Society's show (2 days); Burton-on-Trent Gladiolus show in conjunction with the Staffordshire and Midland Counties Flora Fete (2 days). Thursday, August 12: Abingdon Horticultural Society's show; Aberdeen Flower show (3 days). Friday, August 13: Brechin Flower Show (2 days). Saturday, August 14: Hemel Hempstead and District Horticultural Society's show; Auchencrow (Berwickshire) Flower Show; Coupar-Angus Flower Show; Dysart Flower Show; Fossoway Flower Show.

"Gardeners' Chronicle" Seventy-five Years' Ago.—Orange Trees at the Tuileries Garden.—Workmen are employed at present in repairing the cases containing the Orange Trees of the Tuileries Garden. These trees are of great age, some going back as far as 700 years, and the youngest 300. Every twenty years the earth in each case is changed, and during the three following years they appear sickly. They then acquire fresh strength, and throw out an immense quantity of blossoms. It is this periodical change of nourishment which has led to their longevity. *Galignani, Gard. Chron., August* 9, 1851.

The Week's Work.

THE ORCHID HOUSES.

By J. Collier, Gardener to Sir Jeremiah Colman, Bart., Gatton Park, Reigate, Surrey.

Management of the Houses.—During the present month genial growing conditions should be maintained in each division. Considerable attention should be devoted to shading, ventilation, damping and watering; cleanliness is also equally important. At this period of the year many plants will be nearing the completion of their season's growth, and others will be approaching that stage.

Cattleya.—Such plants as Cattleya Warscewiczii (syn. gigas), C. Dowiana and its variety aurea, and their numerous hybrids, are maturing their growths. Water at the roots will still be necessary and should not be withheld until the flower spikes are removed, and the pseudobulbs thoroughly matured, when the plants should be placed in a somewhat cooler atmosphere and afforded plenty of light and ventilation. These Cattleyas need a little more sunshine than many other members of the genus. This treatment will harden and consolidate the young pseudo-bulbs, and favour the development of new roots. The best time for repotting these plants is immediately they commence to develop roots from the bases of the newly-made growths, for if the work of repotting is delayed, there is a danger of many of the young roots being injured. Afford ample drainage, by half-filling the pot with drainage materials, and using good Osmunda-fibre as a compost. It is advisable to shade the newly-potted plants from bright sunshine for a time, but when roots appear on the surface of the soil exposure to light and air will again be beneficial. During this stage, the plants should be watered with extra care, merely moistening the compost around the edges of the pot.

THE KITCHEN GARDEN.

By F. Streeter, Gardener to Lord Leconfield, Petworth Park, Petworth, Sussex.

Seedling Asparagus.—Thin the seedlings to a few inches apart, and when they have grown sufficiently tall it will be advisable to stretch a line of either thin wire or twine along each row and tie the young shoots to it to make them secure from high winds. A liberal dressing of salt should be applied, and copious supplies of water afforded the roots if the ground is at all dry. Keep the bed absolutely free from weeds and use the Dutch hoe carefully.

Turnips.—Make a liberal sowing of Veitch's Red Globe Turnip for furnishing a winter supply, and sow also Green Top Stone and Golden Ball. Break up the ground to a depth of about three inches or four inches and rake the surface to a fine tilth. Apply a good dressing of soot and wood-ash, and if the ground is dry, water the drills before sowing the seeds, which should be done evenly and thinly. Slightly cover the seeds with fine soil and place nets over the seed-bed to protect the seeds and seedlings from birds. Turnip seeds germinate very quickly. Garden varieties of Swedes may be sown about this date for supplying young roots during the winter and spring.

Runner Beans.—Continue to water and feed the roots of runner Beans that are bearing heavy crops and mulch them with decayed manure. Syringe the plants each evening and pick the Beans before they become too large. The latest sowings should be encouraged with liberal treatment. Beans required for exhibition will need to be examined daily with a view to removing all but the very finest pods. Stop the shoots when they reach the top of the sticks and take out all side growths.

HARDY FRUIT GARDEN.

By W. Auton, Gardener to Viscount Elveden, Pyrford Court, Woking, Surrey.

Black Currants.—So soon as the crop is gathered, it is a good plan to prune the bushes by removing as much as possible of the old wood which has just borne fruit. By doing this now the need for winter-pruning will be reduced to a minimum, and the young shoots of the current year are enabled to finish their growth under good conditions with free access of light and air to every point. Black Currants have been badly infested with aphis during the present season and now that the crop is cleared it is much easier to thoroughly cleanse the bushes. This can be effected by the use of a nicotine and soap insecticide, after which the bushes should be forcibly syringed by means of the garden engine.

Liquid Manure.—Many gardens are situated in favourable positions for obtaining liquid manure, and where such is the case good use may be made of it in fruit quarters at this season, for it contains important plant foods in solution ready for immediate use by the plant. For finishing current crops or for the building up of fruit bushes which have already borne heavy crops nothing could be better than the regular applications of diluted liquid manure. An average sample undiluted should contain up to ·2 per cent. of nitrogen, and ·46 per cent. of potash, and 100 gallons are equal in value, roughly, to ten pounds of sulphate of ammonia and thirty pounds of kainit. On light soils where growth is inclined to be restricted, the Currant, Gooseberry and Raspberry quarters derive great benefit from liberal applications of this fertiliser.

FRUITS UNDER GLASS.

By T. Pateman, Gardener to Sir Charles Nall-Cain, Brocket Hall, Hertfordshire.

Tomatos.—Plants growing in cold houses are bearing heavy trusses, and where good even-sized fruits are required the clusters should be lightly thinned, and the plants assisted with liquid manure varied with a concentrated fertiliser. Small quantities of these fertilisers applied on frequent occasions will give much better results than using large quantities at one time, which is liable to cause splitting of the fruits. So soon as about five trusses of fruits have set on each plant the tops should be taken out and all superfluous growths removed.

Cucumbers.—To maintain a constant supply of Cucumbers, the present will be found a suitable time to make another sowing to raise plants for autumn cropping. Cucumber seeds germinate very easily at this season of the year, and immediately the seedlings push through the soil they should be stood near the roof-glass to ensure stocky growth until they are ready to be planted out, either in a border or on mounds. If the latter system is adopted, the soil should not be made too firm and only a little should be used; it will be better to add a rich compost to the mounds when the roots are active near the surface than to make large mounds in the first place, for unless one is careful with the watering can, the soil will be liable to become sour before the roots have become well-established. Cucumber plants in full bearing require an abundance of food to keep them in a healthy condition, and the fruits should be thinned in order not to over-tax the plants in their early stages of growth. Water should be given freely during hot, dry weather, but a little care is needed during dull sunless times. Guard against the overcrowding of young growths.

Cucumbers in Frames.—The weather of late has been most favourable for Cucumbers growing in cold frames, and where the plants show signs of exhaustion they should be given a light top-dressing of rich compost to encourage the development of surface roots. Both top-dressing and feeding should be on generous lines to keep the plants in good health. Examine the plants on frequent occasions for pinching the lateral growths to prevent overcrowding, and crop them moderately so that a succession of good, clean fruits may be obtained for some considerable time. Should the beds require re-lining with manure, the work should be done forthwith so as to ensure the roots a warm temperature.

THE FLOWER GARDEN.

By F. C. Puddle, Gardener to Lord Aberconway, Bodnant, Taly-Cafn, North Wales.

Propagating Alpine Plants.—It is a wise practice to keep a duplicate stock of the rarer alpines in frames, as a safeguard against losses in the rock garden, and to provide material for propagating purposes. It is surprising how readily many of the more difficult alpine plants may be rooted from cuttings inserted during August. Some of the smaller species, however, require a little special treatment, for in many cases the cuttings are so minute that they would shrivel under ordinary frame conditions. These should be inserted in small thumb pots containing a mixture of three-parts silver sand and one-part leaf-mould. The pots should then be plunged in a bed of sand in a shaded position and the whole covered with a bell glass. The smaller Androsaces, and Dianthi, Edriaianthus, Saxifrages of the Kabschia section and any species, of which the cuttings are necessarily small, may be propagated in this way. I have rooted the rare Androsace glacialis under these conditions. Campanulas, Aubrietias, Aethionemas, Wahlenbergias, the dwarf alpine Phloxes, Pentstemons, and Veronicas, may be propagated without difficulty if the cuttings are inserted in a bed of sandy soil in a cool, shaded frame. Cuttings of Gentiana Farreri, and others of the ornata type will root under similar conditions, as also will many dwarf shrubs usually grown in the rock garden, such as Helianthemums, Cistus, Vacciniums, Lithospermums, Cotoneasters, and the charming dwarf Juniperus communis var. compressa.

Propagation.—The next four or five weeks is probably the most important season of the year for propagating the more permanent subjects of the flower garden. The majority of plants may be propagated vegetatively, and usually this forms a more ready means of increase than the natural process of reproduction by means of seeds. Trees, shrubs, herbaceous plants, and most members of the great family of Dicotyledons may be propagated by means of cuttings, but there are many forms of these, and successful propagation depends on the adoption of the particular form to suit each species. In some cases it may be necessary to make internodal cuttings, in others the callus may have to be scraped after it has formed before roots will develop, or it may be that the cross section cut does not expose the cambium layer sufficiently, which may necessitate the taking of a slice off the side. Again, the cutting should be in the right condition, neither too soft nor too hard. Cuttings should not be unnecessarily denuded of foliage. When taking leaf cuttings it will sometimes be found advisable to remove the axillary bud with the leaf, as this will often grow and form a plant in much less time than is the case when the leaf has to form adventitious buds.

PLANTS UNDER GLASS.

By John Coutts, Assistant Curator, Royal Botanic Gardens, Kew.

Lilium candidum.—When grown in perfectly cool conditions, this Lily is excellent for pot culture. To obtain successful results it is essential to obtain strong, healthy bulbs, and pot them during August. Strong bulbs should be placed singly in seven- or eight-inch pots, as most of the larger-growing Lilies enjoy plenty of root room. As this is not a stem-rooting species the bulbs should not be planted deeply; let the top of the bulbs be little more than covered. The compost should consist of good, well-matured loam, with the addition of sufficient sand or old mortar rubble to ensure the free passage of water; if mortar rubble is not available, a dusting of lime should be added to the compost, as this is a lime-loving species. After potting the bulbs stand the pots in a cold frame so that the lights may be placed over them during wet weather. They may be wintered in cold frames, but no coddling must be attempted as this Lily is perfectly hardy. Early in the New Year the plants should be transferred to a cool, airy greenhouse. With careful watering and cool treatment they should develop strong flowering stems and retain their foliage in good condition.

Bulbs for Forcing.—Success with the early forcing of bulbs depends largely on their being well-rooted. For this reason it is important that they should be potted or boxed during August, or at least early in September. The first to be dealt with are Roman and prepared Hyacinths, Paper White Narcissus and Duc van Thol Tulips. The Hyacinths should be packed closely in five-inch pots, four usually being sufficient in each pot, and in the case of Narcissus, three or four, according to their size, may be placed in six-inch or seven-inch pots. If Roman Hyacinths and Van Thol Tulips are required for cutting, or for lifting to fill bowls or other receptacles in the dwelling-house, they may be packed closely in seed-trays. After potting the bulbs the pots or boxes should be stood at the base of a wall and covered with well-decayed leaf-soil, or ashes from the stokehole, that have been well-weathered. Here they should remain until they are well-rooted, taking care to remove them before top growth pushes into the covering material. All Narcissi for pot culture should be dealt with so soon as possible, for they commence to make fresh roots almost before the foliage has died down.

FOR NORTHERN GARDENERS.

By A. T. Harrison, Gardener to the Marquis of Ailsa, Culzean Castle, Maybole, Ayrshire.

Budding Roses, etc. — Although this work is best left in the hands of nurserymen, it sometimes happens that a particular variety is wanted in large numbers and is difficult to obtain elsewhere. In such cases a stock may be raised in the garden by budding. The main details in this operation are to see that the bark of the stock lifts readily without tearing or sticking to the inner surface, and also that the thin sheath of wood from the under side of the bud parts freely without damaging the base of the bud. When the bud, with its accompanying ring of bark has been inserted in the slit prepared for it, air and water should be excluded so far as possible, by a band of broad raffia or other material, which should be bound round and round, above as well as below the slit, taking particular care to leave an opening over the bud itself. This operation, like that of grafting, gives an added interest to the gardener in his work, and it is a pleasure and pride to point to a fine fruit tree or a Rose bush which is the successful result of one's own handiwork.

Arum Lilies.—Plants of Richardia africana that have been resting for a time should be shaken out and repotted, selecting only sound corms of flowering size. The small ones may be used to increase the stock, and they should be graded and potted at the same time as those of flowering size. Good, turfy loam, to which should be added a quantity of dried cow manure, leaf-mould and sand, is suited to the Arum Lily. Newly-potted plants should be watered very carefully for a time, and in the event of wet weather, should be placed under sashes to protect them from excessive moisture, until the young roots have developed freely in the new soil, after which, watering may be resumed with more freedom. Some growers plant the Arum Lily in the open in well-enriched ground during the summer; in this case the plants should now be lifted and repotted in a fairly rich compost. Shade the plants from direct sunshine until they have recovered from the disturbance at the roots. Both methods are successful in the hands of skilful growers, but the plan of drying off the roots completely, seems to correspond to the conditions prevailing in their native habitat.

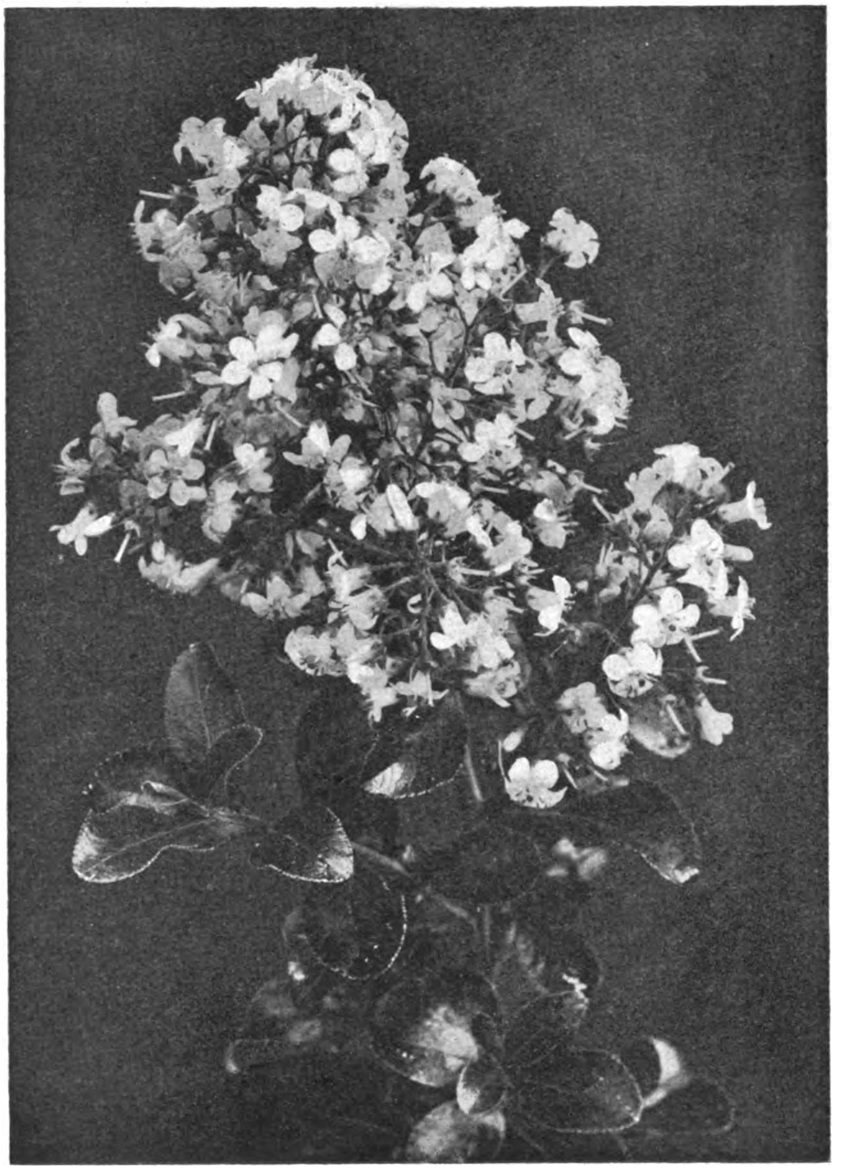


FIG. 55.—ESCALLONIA IVEYI.

R.H.S. Award of Merit, July 27. Flowers white. Shown by Messrs. Robt. Veitch and Son.

(see p. 97.)

Sowing Onions, Winter Spinach, etc.—Ground cleared by the lifting of Potatos is in splendid condition and will need very little preparation in the matter of firming and levelling for the autumn sowing of Onions, Spinach, Parsley, etc., which should be done at once. Seeds of these vegetables should be sown much more thickly now than is recommended for early or spring sowings, as with the shortening days seedlings are less likely to suffer from close contact. Of the many types of Onion, Giant Rocca seems to suit this district best, while the prickly-seeded Spinach is the only kind worth sowing here at this time. A sowing of Cauliflower should also be made now, the seedlings to be pricked out into cold frames later; it was customary to sow Early London at this season, but from its behaviour this year I am so disappointed that I am trying several others, Early London from last year's sowing having given at east eighty per cent. of blind plants

TREES AND SHRUBS.

PROPAGATING SHRUBS FROM CUTTINGS.

The advantages gained by propagating plants from cuttings are well-known; such plants are true to type, they are usually more vigorous in habit, and the necessity of continually uprooting suckers, as is the case with grafted plants, is entirely obviated.

For propagating in the spring a pit or a heated frame is an asset, as the temperature may be kept under control and quick rooting is ensured. When about four to five inches in length, the young growths should be secured, and as the shoots in spring will be too soft and brittle to part readily with a "heel," the base of the cutting should be made directly beneath a bud Remove a few of the lower leaves and insert the cuttings in sharp sand in five-inch pots, standing the latter on a bed of ashes in the frame or pit. They will need inspection twice daily, damping the walls and ashes when necessary and promoting a moist atmosphere and a temperature of about 50° to 55°.

If only cold frames are at the cultivator's disposal, the damping should be less frequent, especially during dull weather. In either case, the cuttings will need to be lightly shaded from bursts of hot spring sunshine and kept close until rooting takes place, when they may be hardened off and potted into sixty-sized pots, there to remain until they are ready for the nursery border.

Ericas have, in most districts, made suitable shoots for use as cuttings, but until the young shoots part readily with a heel of last year's growth they should not be taken.

Make the cuttings in the usual way, leaving the heel intact and insert them in sandy peat very firmly. The base of the cuttings should rest firmly on the soil; this is a very necessary instruction in dealing with the Erica family.

Evergreens, Berberis, and various shrubs with large or woolly leaves, such as Viburnums, are best propagated in the autumn. The best method is to pull off shoots, eight to ten inches in length, with a heel of the previous year's growth and ram them very firmly in a compost composed of loam, sand, and leaf-mould in equal parts. Use six-inch pots and stand them under a north wall and allow them to remain there until the following spring. *S. Bowler.*

AN EPIDEMIC DISEASE OF THE OAK.

DURING last year, a disease of Oak (Quercus pedunculata) has been observed in several localities in Scotland, causing death and, in some cases, premature falling of the leaves. A note was published in the *Transactions of the Royal Scottish Arboricultural Society* (vol. 29, Pt. II,, p. 206), in which it was suggested that the disease was due to attack by Sclerotinia Candolleana, a fungus which had been recorded by Massee in 1910 as occurring on the fallen leaves of Oak and Sweet Chestnut. Massee suggested that, in all probability, infection took place while the leaves were still living but at that time there was no definite proof of the parasitism of the fungus.

The leaves show light brown, discoloured areas of dead tissue, usually rounded and about a quarter-inch across, but sometimes irregular and spreading over the greater part of the leaf. On sectioning the leaf yellowish hyphae were found in the dead tissues. After keeping the leaves damp for about a fortnight, numerous black, rounded sclerotia, about one-eighth inch across, were produced on the leaf surfaces, and similar sclerotia were collected during the winter on fallen leaves.

Leaves bearing sclerotia were kept outside during the winter on the surface of the soil and germination took place during May and June.

The sclerotia swell and give rise to the perfect stage of the fungus. A thin, thread-like stalk grows out and bears a small, flat, reddish cup, about one-eighth inch across, which produces the asci and spores. Infection of small Oak plants was brought about by placing the cup-like fructification in a position so that the ascospores were shot out in the normal manner on to the surface of a leaf. Within a week, a yellowish spot was formed which, later, became brown owing to death of the underlying tissues. On examination, the latter were found to be penetrated in all directions by the hyphae. No conidia has been produced, and it appears that the cup-like fructification is the only method of reproduction of the fungus. The fungus has also been grown in artificial culture, and in this sclerotia were rapidly produced.

There is no doubt that the fungus is an active parasite. During 1925, the Oaks in central Scotland showed extensive damage in September, and already in the present summer serious attacks have been reported from southern and central Scotland.

The disease is confined to the leaf and does not spread to the shoots and, in consequence, after the leaves have fallen, the trees are no longer infected. This being the case, the collection and burning of the fallen leaves, if thoroughly carried out, should entirely remove the source of infection and hence prevent the disease in the following year.

It appears that wherever the fungus is present the majority of the leaves become infected and, in consequence, the effect of the disease is very obvious and unsightly. As, however, only leaves are infected, it is improbable that trees will be killed unless the defoliation is very marked and continues over a number of seasons. *Malcolm Wilson and J. S. L. Waldie, University of Edinburgh.*

ALPINE GARDEN.

WALDSTEINIA TRIFOLIA.

OF the few Waldsteinias in cultivation, I think there can be little doubt that W. trifolia is the best and the most valuable for the garden. It has had applied to it the title of the Running Waldsteinia, but it is eclipsed in "running" by the allied W. fragarioides, a much inferior plant.

It is true that W. trifolia does run, yet it may be kept within reasonable limits with but little trouble, and allowed to cover a fair extent of ground, which it will soon do with its pretty, rather glossy leaves and numerous golden flowers. The flowers are yellow and much bigger than those of W. fragarioides and W. geoides, the two other species common in cultivation.

W. trifolia is an excellent plant for covering a dry bank or for the rock garden. I once had quite a beautiful effect from a carpet of this plant, through which were speared the beautiful blue cones of the Grape Hyacinth, planted thinly. The contrast between the blue and gold was effective, yet not too striking.

W. trifolia begins to bloom in spring and continues to give its bright yellow flowers for several months. It is of dwarf, creeping habit, and does not rise more than two or three inches above the ground. Propagation is easily effected by division and rooted runners. This plant is thoroughly hardy and perennial and thrives perfectly in light soil. It will do well in sun, partial or entire shade, although it does not flower well in dense shade. *S. Arnott.*

MECONOPSIS INTEGRIFOLIA.

THIS beautiful Chinese plant makes an attractive feature in the rock garden during the early summer. Of comparatively recent introduction, it is still a rare plant, but it may easily be obtained, as the raising of plants from seeds presents no difficulty. It likes a position in partial shade, but the site should be quite free from the overhanging branches of trees, as drip is fatal to it.

This Meconopsis shows preference for a soil rich in humus, as such soils do not dry out quickly; perfect drainage is, however, essential or rotting of the plants may take place in excessively wet periods.

The plants remain dormant all the winter, but owing to the woolly nature of the leaves which collect and hold water, some protection should be given against wet. This can best be provided by using small hand-lights or even squares of glass raised a few inches above the plants, so that the air can circulate underneath them. These may be left in position until growth commences in the spring. *A. P. C.*

BULB GARDEN.

ALLIUM GIGANTEUM.

PREJUDICE is difficult to kill, and one may plead long before some deserving plants are given the chance they deserve to prove their worth. Alliums are not generally favoured in gardens because they are malodorous, but a few species and varieties possess merits which should bring them into many herbaceous borders of more than tiny dimensions, their Onion smell being unnoticeable except at close quarters.

The plant under notice is one of the very best of the tribe, tall, strong, large, and of striking appearance and colour, and it is of unusual staying power. The heads are perfectly globular, about the size of a tennis ball, on stalks a yard or more in height, and these flower heads remain effective on the plant for about eight weeks: even in a cut state, they will last a month.

The colour graduates from pale mauve to bright violet, and there is a steely glint or sheen on the blossoms which lights them up with a peculiar radiance in the sunlight. The culture of this plant presents no difficulties; the bulbs should be set in autumn, and if in light, porous soil, which they prefer, the depth should be about four inches. In heavier soil three inches is the better depth, and the bulbs may, with advantage, rest upon and be surrounded by some siftings of porous rubble. It is a good plan to plant in groups, leaving the clumps undisturbed for three or four years, until they become somewhat crowded. A mulch of cut Heather or loose clippings from a Hawthorn hedge will keep the bulbs safely during severe winters, and for nourishment liquid manure may be applied from the time flower heads begin to emerge from the sheath of foliage. Neat stakes are advisable because the heads are weighty and and liable to be beaten to the ground during strong wind or thunderstorms. From the latter end of June to the end of August is the usual flowering period, but I have known young plants raised from seeds bloom through September and into October. *A. J. Macself.*

HARDY FLOWER BORDER.

ANEMONE JAPONICA.

THE end of summer and beginning of autumn brings Anemone japonica to notice, for it is a widely distributed plant, especially in old gardens, and it comes at a season when shade-loving plants are becoming scarce, so far as effective presence is concerned.

It is not everywhere that Anemone japonica succeeds, but when it does well, space can scarcely be occupied by a better subject; the pity is, however, one generally finds that the most successful clumps are of the commonest and poorest types of either the small, thin-flowered, white, or the insipid, washed-our pinks, which are mostly chance seedling forms of the original type. This is a great pity, due, one is disposed to assume, to lack of knowledge of the real gems to be obtained among varieties of recent introduction.

Another contributory cause may be that earlier named varieties were of so little distinctive merit, and were by a few careless distributors frequently misnamed, that an impression was created that one variety was as good as another. and, as a matter of fact, it was frequently so, when choice lay between A. japonica alba and alba superba, A. japonica rosea and rosea splendens and so forth. To-day, however, varieties of conspicuous merit are available, and it may safely be stated that hardy-plant specialists of repute are careful to send out plants true to name.

Of the whites, Louise Uhink, is, to my mind, by far the best of all. Its double row of petals, the diameter of the flowers, and the purity of the white combine to make this the most conspicuous individual in a collection of some twenty varieties, and an additional point of merit is the rich luxuriance of the foliage.

Alice is a good variety, the outside of the half-opened flowers being of bright carmine-pink, the interior of expanded blooms being of rosy-lilac tint. The flowers are large and produced on long stems. Prince Henry is perhaps richest in red, but it is of dwarf habit, and must not be hidden behind other varieties. Max Vogel is a semi-double pink, and, whilst several others are decidedly superior to the old forms, those named embrace the most effective and the clearest colours.

A frequent error in renovating an old plantation of Anemone japonica is to transplant the old, hard, main roots which have an appearance akin to that of charred Horseradish. These old stumps are practically valueless, but the way to produce abundant young stock is to dig up the fine, young, fibrous roots, pull them apart and spread them out on trays of light compost. Cover the roots with clean sand and give them a season round in a cool frame, facing north. In this way a fine batch of vigorous young plants will be available for planting the second spring. *A. T. Macself.*

MONARDA DIDYMA.

Of the several varieties of this old garden plant, Cambridge Scarlet is most usually grown. Stiff in habit, this Bergamot requires no stake or other support.

The square stems, clothed with opposite, exstipulate leaves, fragrant when bruised, bear at their apices twin heads of bright scarlet, labiate flowers. It is a very showy subject for the hardy flower border. The colour, telling in the mass, is a change from the blues of the Delphiniums, and the soft tones of the Lupins flowering at the same season.

Cambridge Scarlet, in common with the varieties Kelmiana, with purple flowers; rosea, salmon-pink, and the violet-purple violacea superba, grows from two feet to three feet tall, and may be increased by division of the roots in autumn. *Fred W. Jeffery.*

APIARY NOTES.

The ebb and flow of hope and despair is the lot of every bee-keeper. The gardener, *per se*, is subject to the vagaries of our English climate, but the weather unsuitable to one crop may yet be suitable to another, whereas the bee-keeper must have one kind of weather at one precise moment or his crop is a failure. This year, until the opening days of July, everything pointed to failure, but now, although there has been no ideal weather for the bees, enough sunshine and warmth has come to make a moderate crop probable, and in some cases, certain. From all directions, however, I hear of reluctance to enter sections. This is due to the beggarly condition of the hives when the fine weather came; for bees will never enter sections until they have filled the brood-nest adequately. Moreover, this has been a year of swarms. The little creatures have been crazy for swarming. One correspondent writes, that, instead of a moderate increase to seven stocks, which he intended, they have forced him to exactly double that number. Of course, no one needs to be forced in that way, but it does indicate how prone to swarming the bees have been this year. Where bees are kept in out-apiaries this has been a great trouble. Nothing is more disheartening than to leave a stock working hard in section crates, and then, a week later, when the next visit is paid, to find a cell has been overlooked, bees have swarmed, and crates are empty.

However, my desire in these notes is to assume that the crop is gathered, or, at any rate, in sight. It is a pleasant assumption, No more pleasant sight than, when the quilts are lifted, a puff of smoke blown in, to see row after row of white-capped sections.

A little care in thoroughly sand-papering, cleaning and wrapping and glazing of sections pays. I sold sections last season to the largest firms in London at many shillings a dozen more than my competitors, because I paid heed to these things.

Another point demands emphasis. Last year beautiful sections were sent to our markets from California. This means keen competition in the future. Those sections were sold at less than the English sections, after carriage had been paid for all those miles. English honey is admittedly in a class by itself, but the Americans set a standard in grading which promises to prove a serious competition for even English honey unless we see to it. They have made us grade our Apples, and they will make us grade our honey. Every one of these sections from California was a perfect section, and as level as could be. To put badly filled, partly capped, or unsightly sections on the market does harm to what might be a lucrative branch of English trade. *J. Mavie.*

PLANTS NEW OR NOTEWORTHY.

SABBATIA CAMPESTRIS.

One or two species of Sabbatia were generally to be found in seed catalogues of forty or more years ago, but they are now seldom offered. These bright-flowered annuals are well worth growing, and the species under notice (Fig. 56) is generally offered in continental seed lists.

The late Mr. W. Thompson of Ipswich, who did much in the way of introducing new annuals, was the author of what is still a delightful book entitled *The Gardening Book of Annuals*; here, we are informed that S. campestris was introduced in 1853 by Mr. Carter, seedsman, Holborn.

I obtained seeds this spring from Messrs. Carter Page and Co., and the plants are now in bloom. It is a cheerful little plant, about one foot in height, bearing an abundance of large, handsome, star-shaped, deep rose flowers with a yellow base. The flowers last in perfection much longer than those of most annuals, remaining bright and fresh for three weeks. It is a choice plant for the annual border, or for those who can tolerate annuals on the rockery.

The Sabbatias belong to the Natural Order Gentianeae; there are many species and Asa Gray remarks that S. chloroides is one of the handsomest plants in the American flora, but this species seems unobtainable.

S. campestris is figured in *Bot. Mag.*, 1857, t. 5015, where it is stated to be a native of Arkansas, Red River, New Orleans, and Texas, and discovered by Nuttall in the first named region.

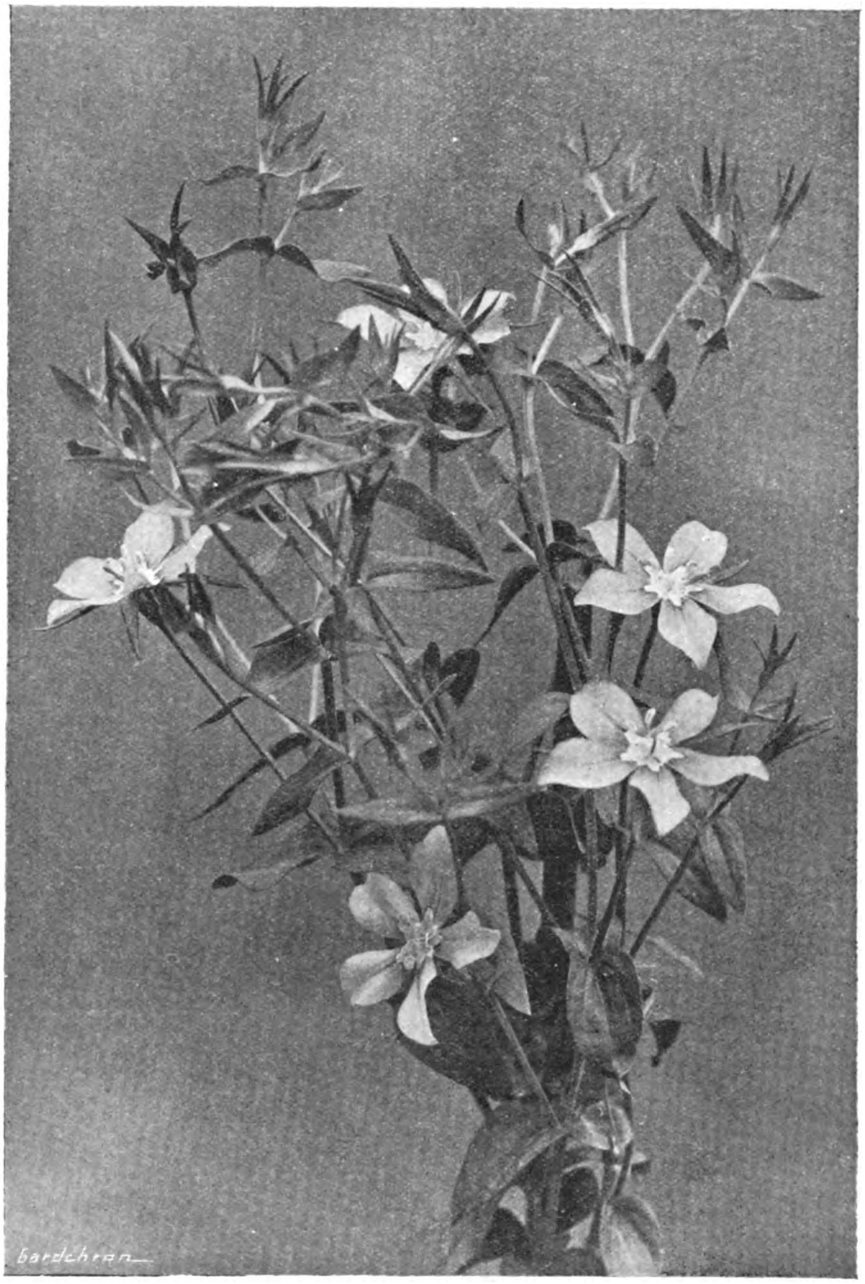


FIG. 56.—SABBATIA CAMPESTRIS.

TRICHOSTEMA LANATUM.

Trichostema is a North American genus of ten species of the Natural Order Labiatae. It includes annuals, perennials and shrubs.

In Bailey's *Standard Cyclopedia of Horticulture*, Hubbard briefly describes three species of Trichostema, and of T. lanatum he remarks: "A very handsome shrub."

Most of the popular American books on the native wild flowers have something to say about the beauty of this plant. It has been given several fanciful names, such as "Romero," and "Blue Curls," and described as forming handsome bushes, three to five feet in height, with narrow, Rosemary-like leaves. The lovely blue flowers are carried on a tall, naked, terminal spike and covered with violet purple down. There may be twelve or more whorls of flowers on a stem, and the chief attraction of the individual blooms is the very extraordinary length of the stamens and style.

There is no great difficulty in obtaining seeds, but getting them to germinate is quite another matter. After several attempts, a single plant was raised in the spring of 1925; growth the first year was slow to exasperation, but during the present year the plant speeded up and blossomed. It is certainly very striking, and a large, well-flowered bush would be something worth striving for. It will, no doubt, be easily propagated from cuttings. Both leaves and flowers have a strong, crisp odour not unlike that of turpentine, but quite pleasant.

In the American floras there are several woodcut figures of this plant, but Pritzel does not give any reference to a coloured illustrarion. *T. Hay.*

INTERVARIETAL DIFFERENCES IN THE POTATO.

(*Continued from p.* 95.)

THE TUBER, SPROUT AND STOLON OF THE POTATO.

A STUDY of the character of the tuber useful in diagnosis will be facilitated by first discussing differentiating points which are apparent during the growing season only and which disappear at maturity.

Potato breeders, in appraising the value of their seedlings have always taken into consideration the proximity of the tubers to the mother plant, hence it is that in very few varieties are tubers formed at a distance from the stems. Nevertheless, there exist amongst varieties differences in the plan of the tuber positions. Generally, early varieties form tubers near the surface; some earlies, however, e.g., Di Vernon, have this peculiarity developed to a very considerable extent, while others, e.g., Eclipse, Witchhill and America, tend to form tubers in tiers and they are thus not so readily exposed. Late varieties differ in their settings, few having tubers very close to the parent; Golden Wonder and Langworthy are types, however, which show a distinct disposition to deep tuber formation; and Templar, Dominion and Irish Chieftain, having comparatively long runners, set tubers at some distance from the mother plant. The development of aerial tubers is characteristic of certain varieties: this phenomenon, known as supertuberation, is frequently due to accident, hence its occurrence may be associated with weakness of some kind in the haulm; it occurs frequently in Edzell Blue.

It has already been mentioned that the eyes of the Potato tuber lie in the axils of scale leaves. These scale leaves are coloured in certain white-skinned varieties, the colour corresponding to that of the sprout and forming an extraordinarily useful feature in identification work: the scale leaves of May Queen, Conquest, Wilson's Seedling (338/2), Irish Chieftain, Blue Grey* and many other varieties are generally blue, while those of Fiftyfold are pink. It frequently happens in white varieties that the heel end of the tuber develops colour during the growing season, as also does sometimes the rose end. The heel ends of Arran Chief and Abundance are blue, while those of Lymm Gray, Epicure and occasionally King George are pink. Immature tubers with pink rose ends are frequently found in Rhoderick Dhu and King George. The classification of tuber shapes, to be shown later, has been compiled from a study of mature, well-grown tubers. During the growing season, especially in July and early August, it is not always possible to form an accurate idea of the type, if small immature tubers only are available for examination.

The characters of the tuber which persist after maturity and which are useful in diagnosis are:—(1) Shape, (2) Colour and Condition of Skin, (3) Position and Depth of Eyes, (4) Colour and Consistency of the Flesh, (5), Type of Second Growth and (6), Microscopic Characters.

(1). SHAPE.

Each variety has its typical tuber shape. Soil conditions, however, may greatly impair the development of this shape, the Potato being apt to follow the line of least resistance; the conditions of nutrition have also some influence: nitrogenous manures tend to increase the length of tubers, while phosphatic and potassic manures and much moisture appear to increase the thickness. There is, in consequence, no rigidity of shape in any variety, and even on one plant several tuber forms may be found. Nevertheless, despite variations, a precise conception of the varietal type can be obtained often by the study of a number of tubers, when the inconstant features are apparent. Except in spherical varieties each tuber has normally an upper and a lower surface. The upper surface practically always possesses more eyes than the lower and in most cases it is rounder than the latter. The true shape is visible when the tuber lies on its lower surface. When thus viewed, the tuber outline may appear round or to have a long axis. In the former case the tuber may be spherical or round (flat); in the latter, it may be pear-shaped, oval or oval (pointed), according as the largest diameter occurs towards the rose-end, about the middle, or towards the heel-end respectively. Tubers may be thin, thick, or of medium depth according to the thickness of the cross-section. Very frequently it is found that the stolon joins the tuber in a depression. When this happens, the tuber is spoken of as having a recessed heel-end, a condition prevailing in the following varieties—America, Champion, Rocks, Early Pink Champion, Fortyfold, Buchan Beauty, Gregor Cups, and Epicure. The depth of the recess appears to be correlated with the depth of the eyes. Varieties with pear-shaped tubers, seldom show the recess; indeed, these often exhibit the reverse character, namely, pointed heel ends, such as are common in King Edward. The classification, to appear later, gives in tabular form the tuber shape of most common varieties. It must be kept in view that the finer the distinctions the more difficult it is to place the various types, especially if few tubers are available for examination. Generally, however, it is easy to relegate a variety to its position in the larger groups, viz., round, oval, oval (pointed) or pear-shaped. Some long-oval and pear-shaped tubers show slight curving of the main axis, e.g., Sharpe's Express and May Queen. *T. P. McIntosh.*

(*To be continued.*)

PUBLIC PARKS AND GARDENS.

SUNDERLAND Town Council has received the sanction of the Ministry of Health to borrow £3,885 for providing a recreation ground.

PROPERTY is to be purchased in the Church Hill Road, Barnet, at £3,925, for providing a recreation ground

THE Ministry of Health recently held an enquiry into an application made by Bexhill Town Council for sanction to borrow £3,272 for the work in connection with the Poolegrove recreation ground.

AN offer of £20,000 is to be made by the East Barnet Valley Urban District Council for the purchase of Greenhill Park for a public park.

APPLICATION has been made to the Ministry of Health by the Ninfield Parish Council for sanction to borrow £500 for the purchase of land near the King's Arms Inn for a recreation. ground.

FLORISTS' FLOWERS.

CHRYSANTHEMUMS.

SOME growers of Chrysanthemums partially starve their plants during August and then, when September comes, by giving them an application or two of some concentrated fertiliser, endeavour to get the plants into first-class condition. This is a mistake, for unless there is plenty of sunlight when applying the artificial manure it is a waste of time and money to do so, for without sunlight the plants cannot make good use of it.

Numbers of growers prefer to purchase a proprietary fertiliser, but for those who make up their own mixture the following formula should give excellent results, on clayey or sandy soils alike:—One part of nitrate of potash, two parts of sulphate of ammonia and four parts of double superphosphate of lime. The double superphosphate contains from thirty-six to forty-four per cent. of soluble phosphate. This is a very concentrated manure, and its great advantage is that each ingredient is perfectly soluble in water, thus giving the plants a quick-acting fertiliser, if the proportions are well-balanced. The analysis is as follows: Nine per cent. nitrogen, eleven per cent. ammonia nine per cent. potash, eleven per cent, sulphate of potash, twelve per cent. of phosphoric acid. and twenty-four per cent. of soluble phosphates The mixture, being concentrated, should be used with care at the rate of one ounce to one gallon of water, and should be given only once the first week, two doses the second week, and afterwards on every third day during the subsequent weeks.

When the flowers begin to appear and have three-quarters expanded, discontinue feeding. Great care should be given to see that the plants receive a sufficient supply and no more. If, after the third application, the plants appear to be growing too freely and the leaves are a very dark green colour, then it is evident that the roots are assimilating more artificial food than is necessary, in which case an application once a week will suffice. On the contrary, if there is no sign of the plant assuming a luxuriant green, apply as advised every second day. In nine cases out of ten the reason why Chrysanthemums do not develop satisfactorily is that the soil for the final potting is either too poor or too rich. With a well balanced fertilizer it is practically impossible to overfeed. provided no more is given than is advised above at every application, and the soil is not too rich. Over feeding has a tendency to destroy the tender roots.

For those whose plants are growing on clayey soil, the following formula will be found a substantial fertilizer: One part sulphate of ammonia, one part kainit and three parts superphosphate of lime. The analysis of this mixture is as follows: five per cent. nitrogen, two per cent. potash, seven per cent. phosphoric acid. It will be seen that the proportion of potash is not so large as in the previous formula, because nearly all clay soils contain a fair proportion of potash, but not sufficient for the requirements of plants in pots. This mixture should be applied in the same quantity as the former one.

Where the soil is of a sandy nature an excellent mixture is made up of four parts of dissolved guano, two parts of kainit and one part of sulphate of potash. Of all the various nitrogen compounds used as a liquid fertilizer, sulphate of ammonia in solution is the best. When applied in the correct quantities it improves the colour of the foliage, at the same time heightening the colour of the flowers. If ammonia sulphate or nitrate of soda is given in excess it results in too rapid growth, soft stems and flabby florets. Guard against watering to excess, as it causes damage to the plants by leaching, moreover, when the plants are frequently saturated with water, the leaves become a pale green and flabby. The best corrective for this condition is to allow the plants to become fairly dry for a day or so, then soak the roots with a solution of half-an-ounce of sulphate of iron in one gallon of water. This will speedily improve the foliage and bring the plant again to a healthy condition. *G. Barton.*

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* See *Miscellaneous Publications*, No. 3. Board of Agriculture for Scotland.

INDOOR PLANTS.

CLARKIAS FOR WINTER DECORATION.

The several varieties of Clarkia elegans which are so prominent a feature n our borders of annuals in summer are equally valuable for culture in pots for indoor decoration in winter.

Seeds should be sown at the present time for this purpose, as the plants like the cool conditions prevailing during the autumn, for their early growth. A good plan is to sow the seeds thinly in small sixty-sized pots and place them out-of-doors in a shady position until germination takes place. So soon as the seedlings are large enough to handle, thin them to three in a pot and grow them on outside in an open, exposed position until there is danger of frost, when they should be placed in a cool pit as near the glass as practicable.

Treated as coolly as possible they will make steady and sturdy growth in these pots until the turn of the year when they may be shifted into five-inch pots, using a compost consisting of two parts fibrous loam, and one part Oak leaf-soil with a good sprinkling of broken lime rubble. Pot firmly to promote short-jointed growths, and place the plants in a position near the roof-glass.

Careful watering will be necessary for a few weeks, and by early February the pots will become full of roots and the plants ready for their final shift into eight-inch pots. For this potting, compost of a rich nature should be used, and firm potting should be again practised.

Plants in eight-inch pots when well-grown will make handsome, bushy specimens, five feet high, and it is wise to place a stake to each plant at this stage sufficiently tall that when the plants are fully grown they will hide the stakes. If the main growths are kept tied to these as growth proceeds, the tying in of lateral growths will not be necessary and the specimen will attain a shapely, graceful appearance.

As the plants advance towards the flowering stage the days will be rapidly gaining in length and the sun in power, rendering abundance of water necessary. Light syringings overhead, both morning and evening during bright weather, until the flowers begin to open, is also very beneficial and helps to check attacks of aphis.

During the later stages of growth when the pots are full of roots, occasional doses of diluted liquid manure should be given, and these may be increased in frequency as the flowers open. Grown in this way the Clarkias are extremely valuable for indoor decorative work and make a welcome change at a season of the year when forced bulbs and flowering shrubs are the predominant subjects. They are also very useful for supplying cut blooms, their long, arching branches lending themselves to effective arrangement. *A. P. C.*

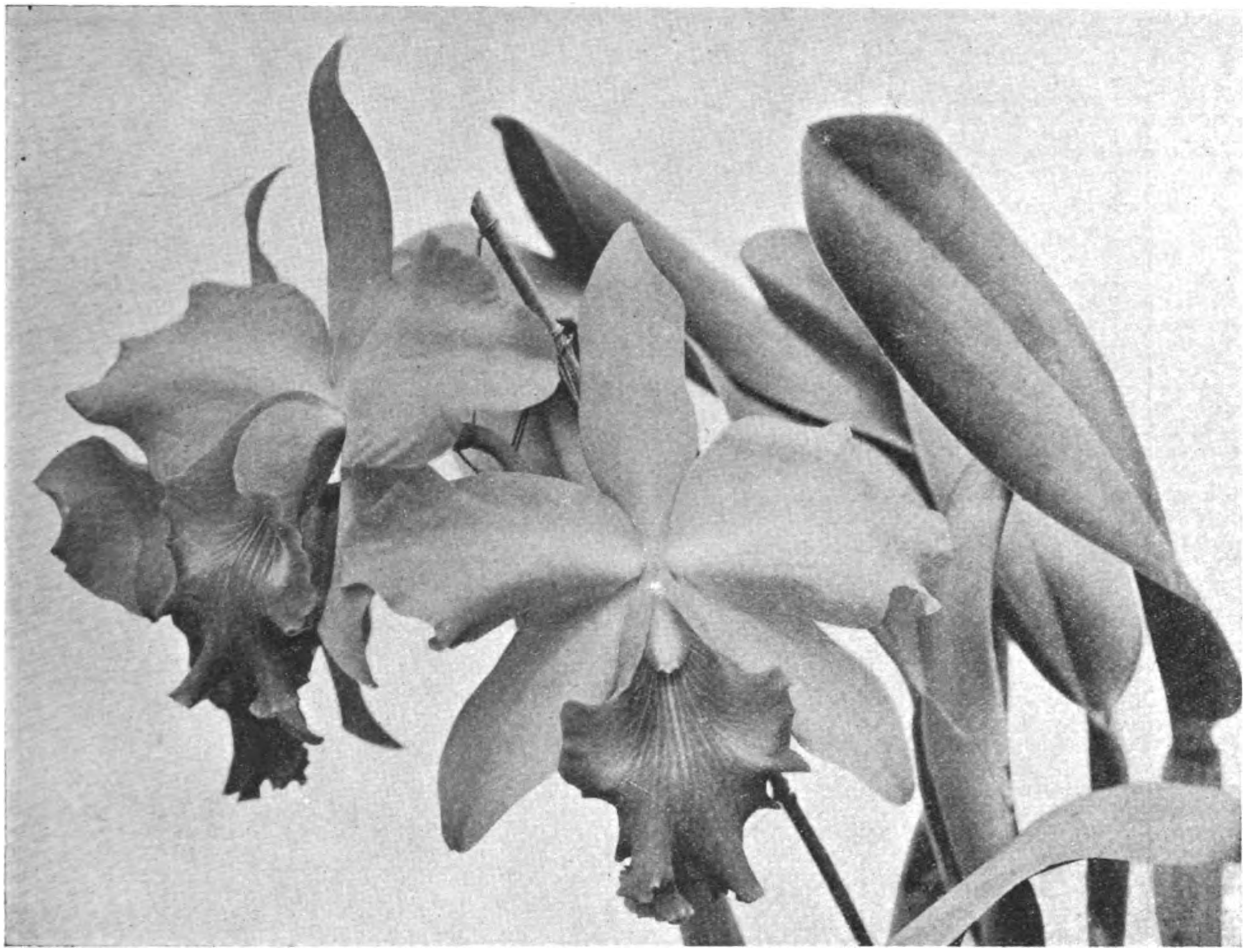

FIG. 57.—SOPHRO-LAELIO-CATTLEYA PRUDENCE.

R.H.S. Award of Merit, July 27. Flowers rosy-purple; shown by Lt.-Col. Sir George Holford (see p. 97).

ORCHID NOTES AND GLEANINGS.

DENDROBIUM PENDULUM, ROXB.

A small importation of Orchids was received recently from Bermuda under the above name.

The arrival of the plants opens up a very interesting question, viz,. what is Dendrobium pendulum ?

Turning to *Index Kewensis*, I find enumerated as a good species " Dendrobium pendulum, *Roxb. Hort. Beng.* 63; *Fl. Ind.*, 111, 484, Burma." In the same work Dendrobium Wardianum is referred to Dendrobium pendulum, the reference being " Dendrobium *Wardianum*, Warner, *Select Orch.* Ser. I, t. 19, —pendulum," thus disposing of the name D. Wardianum, which is so well-known in gardens.

The fact is that Roxburgh's dried specimen and notes were so unreliable that those dealing with them were influenced by probabilities, and the identity with D. Wardianum was most generally accepted. But the reference was based on Warner's figure, which was generally understood to be of the Assam variety, this being a much more slender plant and with smaller flowers than those of the Burma type and the colouring was also different.

D. pendulum has seldom been referred to in print but there is always doubt as to its standing.

Turning to that excellent book, Sander's *Orchid Guide and Addenda*, 1901, in which is enumerated the greatest number of known species with brief descriptions, habitat, synonyms, etc., we find " Dendrobium pendulum, Burma, better known under the name of crassinode," and the varieties of D. crassinode are placed under D. pendulum. But in the enumeration of the hybrids, D. crassinode very properly appears and D. pendulum is omitted. Doubtless Messrs. Sander had a high authority for the exaltation of D. pendulum, for they are always careful in their records. But the fact remains that these varying records seek to eliminate D. Wardianum and D. crassinode, two of the most firmly established names in our gardens, a fact which is never likely to be accomplished.

The substitution of D. pulchellum, Roxb. for D. Dalhousieanum is almost as doubtful as the D. pendulum case, and in this instance also the name by which it is so well known to gardeners seems likely to stand good in gardens at least. The trouble comes by the proneness of the worker on bad and insufficient material to seek identification among the species known in gardens, which is only advisable when the type material is good. *James O'Brien.*

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Letters for Publication *as well as specimens of plants for naming, should be addressed to the* **EDITORS, 5, Tavistock Street, Covent Garden, London.** *Communications should be* WRITTEN ON ONE SIDE ONLY OF THE PAPER, *sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.*

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Newspapers.—*Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editors to see.*

Urgent Communications.—*If sent by telegraph, these should be addressed "Gard. Chron.," Rand; or by telephone, to Gerrard, 1543.*

GARINISH ISLAND, CO. KERRY.

BETTER than a castle in Spain, because nearer, is an island off the Kerry coast. Less storm-wracked, too, for these islands have no winter and their gardens no fear of frost, and in their gentle glades the Tree Ferns, Bananas, and every delicate type of Azalea will grow in green security.

A shining morning in May, the Kerry mountains a soft blue against the gay summer sky and the waters of the bay every colour from malachite to beryl, from chrysolite to ultramarine—this largesse of beauty was ours for the price of the hotel motor boat that throbbed its cheerful course towards the rocky island.

The island has a welcoming little boat slip that runs into the clearest water, water that begs one to dive into its translucence. But it was May, so we took the first path and wandered onwards, wrapt in the belief that we has really found the Kingdom of Faery. The late Lord Dunraven's constructive policy has shown itself in his gardens at Adare, and here in Garinish where the sub-tropical shrubberies and the rock gardens are especially fine. How well for Kerry that she can boast of Mrs. Bryce's island garden of Garinch hear Glengariff, of Lord Landsdowne's garden at Derreen, Captain Wyndham-Quinn's wild garden at Derrynane, and Lord Dunraven's Garinish.

With what enviable grace would Mr. John Evelyn have visited all these places and described their beauties. I pictured him walking with decorous steps about these glades and recording their height—at least twenty feet—and the beauty of all the varieties of Bamboo that tower above the traveller; or with a courtly nose sniffing the heavy-sweet scent, so like the Stephanotis, of Pittosporum Tobira. This revels in the island as Lilac does in cooler places. He would have used pages of his diary to describe how the path winds to a sheltered glade of Tree Ferns, where undismayed by these foreign grandees, the native Ferns, Osmunda and Hearts-tongue live a life of verdant bliss.

Again the little path winds and twists, promising always new surprises and keeping its word with Myrtles of every variety, growing to giant stature, hiding for a moment the sudden blaze of colour as the path climbs up among a mass of Azalea Fosteriana, and other Azaleas more than the wiser of us two wanderers could name. From this little shining upland we looked down upon a wood of Palms and Cordylines.

The house stands secure in its island peace and looks towards the mountains and the Atlantic. Here we met its caretakers, the gardener, Mr. Robertson, and his wife. He told us of his difficulties and experiments, his wrestlings with the rocks, his difficulty in bringing the right soil to his treasures. But of frost and snow he need have no fear. From the terrace steps he led us through a sheet of Genista hispanica, masses of Oxalis, and Callistemon lanceolatus overhanging the rocks. The path wandered among giant Bamboos, and another brought us to a glen glowing with Japanese Maples where a great Eucalyptus stood sentinel. We followed the path through brilliant Rhododendrons to a glade of Tree Ferns so acclimatised that their friendly warm trunks nourished Rhododendron seedlings. Here the ground was carpeted with Funkias of all kinds with their green or variegated leaves, with Saxifrages and Epimediums. There was a carpet edging of pale blue Periwinkle at one side of the path and clumps of Irises at the other.

When the little path scrambled upwards it was to find some new outcrop of rocks. In the distance, sea and dim folds of mountain, veiled by a pine tree; below one's feet a cliff with a great vine, Vitis Coignetiae, and the near rocks yellow with Rock Roses and pink with Saxifrage. Gradually the path grew wilder, the trees were of native growth—Thorns, and Oaks and Hazels. Then we were in the Gorse and Heather at the summit of the island. The little path had kept the best surprise for that moment of attainment for before us was the sea and the sky with its "great cloud galleons." All Kenmare river, the great estuary that deserves the name of bay, lay below us in blue and silver, cradled in mountains, and away to the west was the Atlantic. Of all the beauties that we had seen this was the most beautiful. The sub-tropical glades had been bewildering; a John Evelyn with his taste for the foreign and fantastic would have lingered there content. But the summit, the wild, Heathery hill-top, was Kerry in all its blue and green, its grey and silver, its gentleness and wistful tenderness. Away, beyond Lamb's Head and the Scariffs was the Atlantic, the highway to fortune for so many Kerry boys and girls.

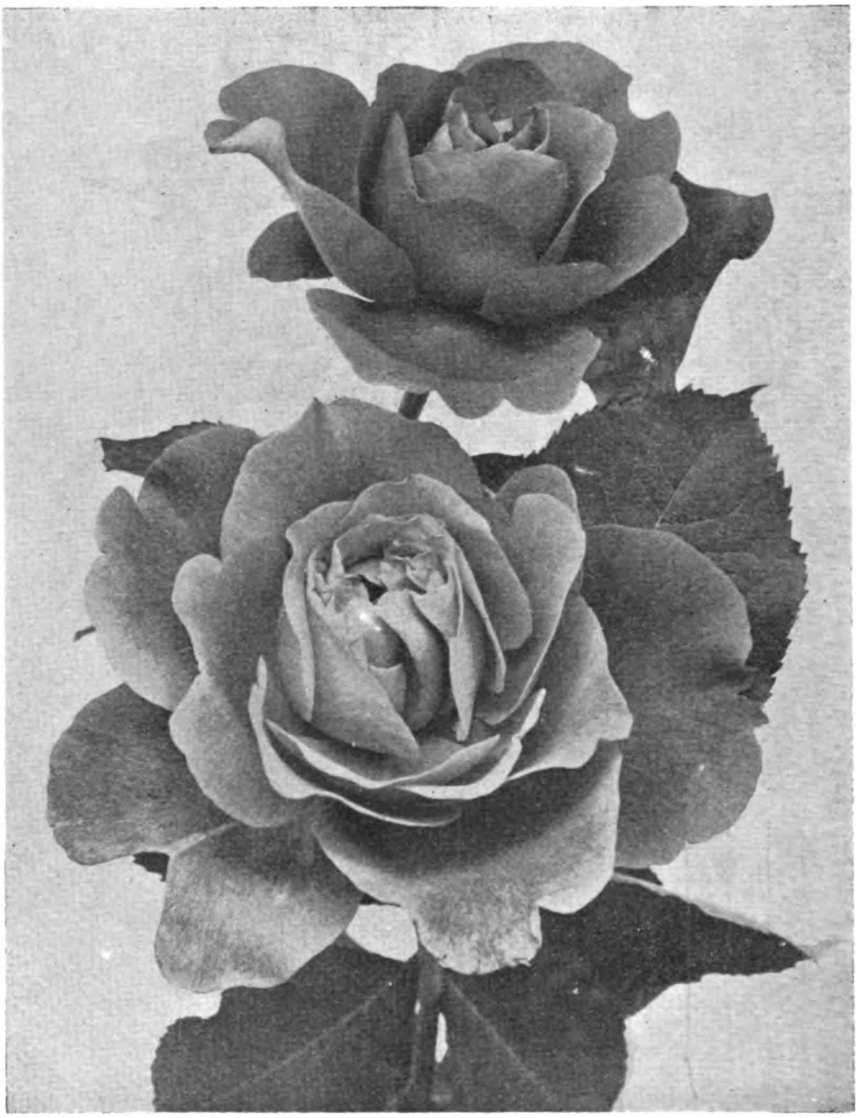

FIG. 58.—ROSE BEDFORD CRIMSON.

N.R.S. Certificate of Merit, July 2. Flowers crimson, very fragrant.
Shown by Messrs. Laxton Bros. (see p. 37.)

There is something about a hill top that persuades the traveller that it is good to be there, but we were to follow the little path downward again to the warm sleepy glens where it seemed "always afternoon."

In the glory of Rhododendrons a specimen of R. Falconeri, grown to tree size, was notable. Near it stood R. Shepherdii with its bright red sheaths; and a tree of Acacia falcata. Beneath them the rocks were blue with Lithospermum. Azalea indica was a sheet of white, revelling in its island home. But the little path was leading us back to the boat slip and the motor boat that had come to carry us to the mainland.

Very reluctantly we left the island, trailing our hands in the clear sea water. *W. M. Letts.*

REPORT ON THE CONDITION OF THE OUT-DOOR FRUIT CROPS.

[FROM OUR OWN CORRESPONDENTS.]

THE WORDS "AVERAGE," "OVER," OR "UNDER," AS THE CASE MAY BE, INDICATE THE AMOUNT OF THE CROP; AND "GOOD," "VERY GOOD," OR "BAD," DENOTE THE QUALITY.

FULLER COMMENTS WILL BE GIVEN IN THE FOLLOWING NUMBERS. SEE ALSO LEADING ARTICLE ON PAGE 101.

COUNTY.	APPLES.	PEARS.	PLUMS.	CHERRIES.	PEACHES AND NECTARINES.	APRICOTS.	SMALL FRUITS.	STRAWBERRIES.	NUTS.	NAME AND ADDRESS.
SCOTLAND										
Scotland, N.										
MORAYSHIRE	Under; bad	Under; bad	Under; bad	Under; bad	Average; good	Under; good	Average; good	Average; good	....	John Machpherson, 4, Hawthorn Road, Elgin.
	Under	Under	Under	....	....	....	Under	Average	....	James Jamieson, Easter Elchies, Craigellachie.
ROSS-SHIRE	Under; bad	Under; bad	Under; bad	Under; bad	....	....	Average; good	Average; good	....	John Melrose, Ardross Castle Gardens, Alness.
SUTHERLANDSHIRE	Under; good	Average; good	Average; good	Average; good	....	....	Average	Average	....	W. F. Game, Dunrobin Castle Gardens, Golspie.
Scotland, S.E.										
BERWICKSHIRE	Average; good	Average; good	Under; good	Under; good	Under; good	Average; very good	Average; good	Average; good	....	Walter Richardson, Milne Graden Gardens, Coldstream.
PEEBLESHIRE	Under; good	Under; good	Under; good	Average; very good	Over; very good	....	Average; very good	Average; good	....	Alex. Black, Portmore Gardens, Eddleston.
Scotland, E.										
ABERDEENSHIRE	Average; good	Average; good	Average; good	Average; good	....	....	Over	Over	....	Simon Campbell, Fyvie Castle Gardens, Fyvie.
	Over; good	Average; good	Over; good	Average; good	....	....	Over; very good	Average; good	....	James Grant, Rothienorman Gardens.
	Average; bad	Under; bad	Average; good	Under; bad	Average; good	Average; good	Over; good	Average; good	....	John McKinnon, Haddo House Gardens.
BANFFSHIRE	Average	Under	Under	Average	....	....	Under; bad	Average; good	....	George Edwards, Ballindalloch Castle Gardens.
FIFESHIRE	Average; good	Under	Under	Average; good	....	Under	Average; good	Average; good	....	Chas. Simpson, Wemyss Castle Gardens, East Wemyss.
	Average; good	Average; good	Under; good	Average; good	Average; good	Average; good	Under	Over; good	....	D. McLean, Raith Gardens, Kirkcaldy.
FORFARSHIRE	Under	....	Under	Under	....	....	Under	Under; good	....	Donald McInnes, Glamis Castle Gardens.
	Average; good	Average; good	Average; good	Under; good	....	....	Over; good	Average; good	....	David Milne, Baldovan Gardens, Dundee.
	Under; good	Average; good	Under; good	Under; bad	Over; good	....	Under; good	Average; good	....	Robert Bell, Kinnaird Castle Gardens, Brechin.
	Under	Average; good	Under	Under	....	....	Average	Average; good	....	David Boyle, Tay Park Gardens, Broughty Ferry.
	Average	Under	Average; good	Under	....	....	Under; good	Average	....	J. P. Peffers, Panmure Gardens, Carnoustie.
KINCARDINESHIRE	Average	Under	Average	Under	....	....	Average	Over	....	William Thomson, Ury House Gardens, Stonehaven.
MIDLOTHIAN	Under	Under	Under	Average	....	....	Average	Over	....	William Crighton, Morton Hall Gardens, Liberton.
PERTHSHIRE	Average; good	Under; bad	Under; good	Over; very good	Average; good	....	Average; very good	Average; very good	....	James Tunstall, Keir Gardens, Dunblane.
	Under; good	Average	Under	Over; very good	Average; good	....	Over; very good	Over; very good	....	J. Walpole, Drummond Castle Gardens, Crieff.
	Under	Under	Average	Under	Average	....	Over	Average; good	....	Chas. Crighton, Jordanstone Gardens, Meigle.
	Average	Over	Average	Average	Over	Over	Over	Average	....	James McGregor, Rossie Priory Gardens, Inchture.
Scotland, W.										
ARGYLLSHIRE	Under; bad	Under	Under; good	Average; good	Average	....	Average; good	Average; good	....	D. S. Melville, Poltalloch Gardens, Kilmartin.
AYRSHIRE	Average; good	Under; good	Average; good	Over; very good	Over; very good	Under; bad	Average; good	Average; good	Under; good	D. Buchanan, Bargany Gardens, Dailly.
	Over	Over; good	Average	Under	Average	Under	Over; good	Under	....	A. T. Harrison, Culzean Castle Gardens, Maybole.
BUTESHIRE	Average; good	Average; good	Under; good	....	Average; good	....	Average; good	Under; good	....	John J. Davidson, Ardencraig, Rothesay.
DUMBARTONSHIRE	Average; good	Under	Over; good	Average	....	....	Average; good	Under	....	John Brown, Cairndhu Gardens, Helensburgh.
DUMFRIESSHIRE	Under; good	Under	Average	Average	....	....	Average	Under	....	James McDonald, Dryfeholm Gardens, Lockerbie.

CONDITION OF THE FRUIT CROPS—*(continued)*.

COUNTY.	APPLES.	PEARS.	PLUMS.	CHERRIES.	PEACHES AND NECTARIES.	APRICOTS.	SMALL FRUITS.	STRAWBERRIES.	NUTS.	NAME AND ADDRESS.
ENGLAND										
England, N.E.										
DURHAM	Under	Under	Under	Average	Under	....	Average	Under	....	T. Hedman, Ravensworth Castle, Gateshead-on-Tyne.
	Under; good	Under; bad	Average; very good	Over; very good	....	....	Over; very good	Average; good	....	J. A. Woods, Beamish Park Gardens, Beamish, S.O.
NORTHUMBERLAND.....	Under; good	Under; bad	Under; bad	Average; good	....	Average; good	Average; good	Average; good	....	William McCombie, Newton Hall Gardens, Stocksfield-on Tyne.
	Under; bad	Under; bad	Under; bad	....	....	....	Average; good	Average; good	Under; bad	J. Winder, Howden Dene Gardens, Corbridge-on-Tyne.
YORKSHIRE	Under	Under	Average	Under	....	....	Over	Under	....	Chas. Wakefield, Birchlands Gardens, Fulwood Road, Sheffield.
	Under; bad	Over; good	Average; good	Average; good	Over; very good	....	Over; very good	Under	....	C. A. Ilott, Grantley Hall Gardens, Ripon.
	Average	Average	Under	Average	Average	Under	Over; good	Over; good	....	John Turton, Sowerby Hall Gardens, Bridlington.
	Under	Under	Under	Under	....	....	Average	Average	Average	E. Knowles, The Hagg Gardens, Mirfield.
	Under; good	Average; good	Under; bad	Under; bad	....	....	Average; very good	....	....	W. H. Bolton, 8, Ash Grove, Beverley Road, Hull.
	Under; good	Under; good	Average; good	Average; good	Under; good	....	Average; good	Under; good	Over; very good	J. S. Coates, Dalton Hall Gardens, Beverley.
	Under; good	Average; good	Under; good	Under; good	....	Under; good	Over; good	Average; good	....	Jas. E. Hathaway, Baldersby Park Gardens, Thirsk.
	Average; good	Under; bad	Under; good	Under; bad	....	....	Average; very good	Average; very good	....	A. Dryden, Field House Gardens, Triangle, Halifax
	Under; good	Over; good	Average; good	Under	....	....	Over; very good	Average; good	....	J. G. Wilson, New Millerdam, Wakefield.
England, N.W.										
LANCASHIRE..................	Under	Under	....	Average	Average	....	Under	Average	....	W. B. Upjohn, Worsley Hall Gardens, Worsley, Manchester
England, E.										
CAMBRIDGESHIRE	Under; good	Under; good	Average; good	....	Under; very good	Under; very good	Average; very good	Average; good	....	Arthur Sewell, 42 Barton Road, Ely.
	Under; bad	Under; bad	Average; very good	Average; good	....	....	Over; good	Under; good	Average; good	T. Spooner, Whitcroft, Meldreth, Royston.
	Under; bad	Average; good	Over; good	Average; good	....	....	Average; good	Over; very good	Average; good	Charles Ralph, The Gardens, Kneesworth Hall, Royston
ESSEX..........................	Under; bad	Average; good	Average; good	Average; good	Average; good	Over; good	Under; bad	Under; bad	Over; good	Arthur Bullock, Copped Hall Gardens, Epping.
	Under; bad	Average; good	Over; good	Average	Average; very good	Average; good	Over; good	Average; very good	Average	C. A. Heath, Morleys, Great Hallingbury, Bishop Stortford.
	Under; good	Average; very good	Average; very good	Over; good	Average; good	Under; bad	Under; bad	Average; good	Over; very good	W. T. Franklin, Little Laver Hall Gardens, Harlow.
	Under; bad	Average	Average	Under; bad	Over; very good	Over; very good	Over; very good	Average	Under; bad	John King, Arabin House Gardens, High Beech, Loughton
	Under; bad	Average; good	Average; good	Under; bad	Average; bad	Under; bad	Under; bad	Average; good	Average; good	C. Wakely, East Anglian Institute, Chelmsford.
HUNTINGDONSHIRE.....	Under	Average	Average	Average	Average	Average	Under	Average	Average	James Hewitt, Castle Gardens, Kimbolton.
	Under	Average; good	Average; good	Under	Under; good	Average; very good	Under; bad	Average; very good	Average	Guy S. Aubertin, Connington Castle Gardens, Peterborough
LINCOLNSHIRE	Average; good	Over; very good	Under; bad	Under; good	Under; bad	....	Over; very good	Average; good	Under	Alexander M. Warnes, Highfield House Gardens, Gainsborough, Lincs.
	Under	Average; good	Under	Under; bad	....	Under	Under	Average; good	....	Thomas Cox, Hainton Hall Gardens, Lincoln.
	Average	Over	Under	Under	Under	Average	Under	Average	Under	F. J. Foster, Grimsthorpe Castle Gardens, Bourne.
	Under; good	Average; good	Under; good	....	Under; good	....	Over; very good	Under; good	....	A. E. Jackson, Normandy Park Gardens, Scunthorpe.
	Under	Average	Under	Average	Average	Under	Average	Average	....	J. F. Vinden, Harlaxton Manor Gardens, Grantham.
NORFOLK	Under; bad	Average; good	Under; bad	Under; bad	Average; very good	Under; good	Over; good	Average; good	Average; good	G. Barrell, Merton Hall Gardens, Walton.
	Average; good	Average; good	Under; good	Under; good	Average; good	Under; bad	Average; good	Under; bad	Under; very bad	C. G. Nichols, The Manor House Gardens, Gt. Ormesby, Gt. Yarmouth.
	Under; bad	Average; good	Average; bad	Under; good	Average; good	....	Under; good	Average; bad	....	A. J. Jones, Gunton Park Gardens, Norwich.
	Under	Under; good	Under	Average	Under	Over	Average	Over	....	John Dewhurst, Quidenham Hall Gardens, Norwich
	Under	Average; good	Average; good	Under	....	....	Under	Under; good	Under	Isaiah Johnson, Catton House Gardens, Norwich.

CONDITION OF THE FRUIT CROPS—*(continued.)*

COUNTY.	APPLES.	PEARS.	PLUMS.	CHERRIES.	PEACHES AND NECTARINES.	APRICOTS.	SMALL FRUITS.	STRAW-BERRIES.	NUTS.	NAME AND ADDRESS.
SUFFOLK	Under; good	Average; good	Average; very good	Under; bad	Average; good	....	Over; good	Over; bad	....	J. J. Bumstead, Glemham Hall Gardens, Wickham Market.
	Under; good	Average; very good	Under; good	Under; bad	Over; very good	Under; bad	Average; very good	Over; very good	Under; bad	S. J. Robbins, Auberies Gardens, Sudbury.
	Under; good	Average; good	Under; good	Average	Average	....	Average	Under; good	....	Arthur E. Sales, Flixton Hall Gardens, Bungay.
	Under; bad	Average; good	Average; good	Under; bad	Average; good	Average; good	Average; good	Under; bad	Under; good	A. K. Turner, Orwell Park Gardens, Nacton. Ipswich
	Under	Average	Over	Average	....	....	Average	Under	....	E. G. Creek, County Horticultural Instructor, Abbey Ruins House, Bury St. Edmunds.
	Under	Over; good	Average; good	Under	....	Under; good	Average; bad	Average; good	....	H. Coster, Ickworth Gardens Bury St. Edmunds.
Midland Counties.										
BEDFORDSHIRE	Under; bad	Over; very good	Average; very good	Under; bad	Average; good	Average; good	Over	Over	Under; bad	W. G. Warner, Chicksands Priory Gardens, Shefford.
	Under; good	Average; very good	Average good	Under; bad	....	Average; good	Average; good	Under: good	Under	Chas. Turner, Ampthill Park Gardens, Ampthill.
BUCKINGHAMSHIRE.....	Under; bad	Under; bad	Under; bad	Under; good	Under; bad	Under; bad	Average; bad	Average; good	Average; good	W. Hedley Warren, Sunnymead, London Road, Buckland, Aylesbury.
	Under	Average	Under	Under	Under	Under	Average; good	Under	Average	James Wood, Hedsor Park Gardens, Bourne End.
	Under; bad	Average; good	Average; good	Under	Average; good	....	Average; bad	Average; good	Under	William Brooks, Abbey Gardens, Great Missenden.
	Average; bad	Average; under	Over; very good	Average; good	Average; very good	Under; bad	Under; good	Average; very good	Under; bad	G. Humphrey, Finefield Gardens, Bath Road, Slough.
	Under	Under	Under	Average	Average	Under	Over; very good	Average	Average	A. Adams, Ridgeway, Bledlow Ridge, West Wycombe.
	Under; good	Average; very good	Over; good	Average; good	Under; bad	Average; good	Under; very good	Over; very good	....	W. A. Bright, Hughenden Manor Gardens, Wycombe.
	Under; bad	Over; good	Average; good	Average; good	....	....	Average; very good	Average; good	Under; good	G. F. Johnson, Waddesdon Gardens, Aylesbury.
	Under; bad	Over; good	Over; good	Under; bad	Over; good	Average	Over; good	Over; good	Under	F. Reid, Dropmore Gardens, Burnham.
	Under; bad	Average; good	Under; bad	Under; bad	....	....	Under; bad	Under; bad	Under; bad	Wm. Turnham, Greenlands Gardens, Henley on-Thames.
CHESHIRE	Under	Under	Under	....	....	....	Average	Under	....	C. E. Ardern, Lymm, Cheshire.
	Under	Average	Average	Average	Under	Average	Under	Under	....	T. A. Summerfield, Alderley Park Gardens, Chelford.
	Average; good	Average; good	Under	Average; good	....	....	Average; good	Over; very good	....	James B. Allan, Tirley Garth Gardens, Taporley.
	Under	Average	Average	....	....	....	Average	Under	....	Alfred N. Jones, Marbury Hall Gardens, Northwich.
	Under	Under	Under	Average	Average	Under	Under	Under	Under	Jas. Atkinson, Torkington Lodge Gardens, Hazel Grove, Stockport.
DERBYSHIRE................	Under; good	Average; good	Average; good	Average; good	....	Under; good	Over; good	Over; very good	....	John Maxfield, Darley Abbey Gardens, Derby.
	Under; bad	Under; good	Under; good	Average; good	Over; good	....	Average; bad	Average; very good	....	C. A. Corke, Oak Cottage Gardens, Sudbury.
	Under; good	Under; good	Under; good	Average; good	....	....	Over; good	Average; good	....	J. Tully, Osmaston Manor Gardens, Ashbourne.
HERTFORDSHIRE	Under; bad	Over	Over	Under	Average; good	Average	Over	Under	Under; bad	Richard Staward, Ware Park Gardens, Ware.
	Under; good	Average; good	Under; good	Under; bad	Average; good	....	Under; bad	Average; very good	Average; good	Geo. H. Eill, Caldecote House Gardens, Bushey Heath, nr. Watford.
	Under	Average	Average	Average	Average	Average	Average	Under; bad	Average	Edwin Beckett, Aldenham House Gardens, Elstree.
	Average; bad	Average; good	Average; good	Average; bad	Average; bad	Average; good	Average; good	Average; good	Average; bad	W. Stephenson, Hyde Hall Gardens, Sawbridgeworth.
	Under; very good	Average; good	Average; good	Under	Average; good	Under	Average	Average; good	....	T. Pateman, Brocket Hall Gardens, Hatfield.
	Under; good	Average; good	Average; good	Under; good	Average; very good	Average; good	Under; good	Average; good	Average; good	A. J. Hartless, King's Walden Bury Gardens, Hitchin.
LEICESTERSHIRE	Under; good	Under; good	Under; good	Under; bad	Average; good	Under; good	Average; very good	Average; good	Under	A. H. Campin, Whetstone Pastures Gardens.
	Average	Average	Under	Under	Under	Average	Over; very good	Average; good	....	D. Thompson, Whalton House Gardens, nr. Loughborough.
	Under	Average	Average; good	Under	Average; good	....	Average; good	Under; good	Under	W. Coe, Prestwold Gardens, Loughborough.
	Under	Under	Under	Under	Under	Under	Average	Average	Under	F. Ibbotson, Rolleston Hall Gardens, Billesdon.
	Under; very good	Average; very good	Under; good	Average; very good	....	....	Under; bad	Under; very good	....	Wm. Paterson, Swithland Hall Gardens, Loughborough.
NORTHAMPTONSHIRE	Under; bad	Under; bad	Average; good	Under; bad	....	....	Average; good	Average; good	Under; bad	Alfred Child, Catesby House Gardens, nr. Daventry.

CONDITION OF THE FRUIT CROPS—(*continued.*)

COUNTY.	APPLES.	PEARS.	PLUMS.	CHERRIES.	PEACHES AND NECTARINES.	APRICOTS.	SMALL FRUITS.	STRAWBERRIES.	NUTS.	NAME AND ADDRESS.
NORTHAMPTONSHIRE (Continued)	Under; bad	Average; good	Over; good	Under; bad	Average; good	Under; bad	Average; good	Average; bad	Under	**F. W. Gallop, Lilford Hall Gardens, nr. Peterborough.**
	Under; bad	Average; good	Under; bad	Under; bad	Average; good	Average; very good	Over; good	Average; very good	Average; good	**Arthur R. Searle, Castle Ashby Gardens, Northampton.**
NOTTINGHAMSHIRE.....	Under	Over	Under	Under	Average	Under	Average	Average	Average	**S. Barker, Clumber Gardens, Worksop.**
OXFORDSHIRE.............	Under; bad	Under; very good	Under; very good	....	Average; good	Over; very good	Under; very good	Average; good	....	**T. W. Whiting, Shotover Park Gardens, Wheatley.**
	Under	Average; good	Under	Under; bad	Average	Average	Average	Average	Under	**Ben Campbell, Cornbury Park Gardens, Charlbury.**
	Under	Average	Over; good	Average	Under	Average	Under	Average; good	Under	**B. Elkington,** Berry Cottage, Broughton Road, Banbury.
	Average; good	Average; good	Average; very good	Under; good	Under; good	....	Over; very good	Under; bad	Over; good	**Victor R. S. Gammon, Eynsham Hall Gardens, Witney.**
STAFFORDSHIRE..........	Under; good	Average; good	Under; good	Under	....	....	Average; good	Under; bad	Under; bad	**John W. Miskin, Woodseat Gardens, Rocester.**
	Under; good	Average; good	Under; good	Average; good	....	Under; bad	Average; very good	Average; very good	Under; good	**E. Bannerman, Blithfield Hall Gardens, Admaston.**
	Under	Under	Under	Average	Under	Under	Average	Average	Under	**E. T. Gilman, Hillside, Rugeley.**
	Under; bad	Under; good	Under; good	Average; good	Average; good	Average; good	Average; good	Over; good	....	**T. G. Cheney, Shenstone Moss Gardens, nr. Lichfield.**
	Under; good	Over; good	Average; good	Average	....	....	Average; good	Average	Over; good	**Herbert Cragg, Grange Gardens, Wergs, Wolverhampton**
WARWICK.......................	Under; bad	Under; very good	Under; very good	Under; bad	Under; bad	Under; very good	Average; very good	Average; very good	Average	Chas. Marchment, Moreton Hall Gardens, Moreton Morrell.
	Under	Average	Under	Under	Under	Under	Average;	Under	Under	**Burton Gaiger, Wellesbourne House Gardens, Warwick.**
	Average; good	Average; good	Over; good	Under; bad	....	....	Average; good	Under; bad	....	**W. E. Wright, Stockton House Gardens, Nr. Rugby**
	Under; good	Average; good	Average; good	Under; good	Average; bad	Over; good	Under; bad	Average; good	Average; good	**H. Dunkin, 86, Emscote Road, Warwick.**
	Under; good	Average; very good	Average good	Under; bad	Average; good	Under; bad	Average; good	Under; bad	Over; very good	**A. E. Moss, Billesley Manor Gardens, Alcester.**
	Under; bad	Under	Average; good	Average; good	Average; good	Under	Average; good	Under; good	Over	**W. Harmon, Newnham Paddox Gardens, Rugby.**
	Average; good	Under; good	Under; good	Average; good	Under; bad	Over; good	Average; good	Average; very good	....	**John C. Gillies, Moxhull Park House Gardens, Wishaw, Erdington, Nr. Birmingham**
	Under; good	Under; good	Average; good	Average; good	Under; bad	Over; very good	Under; bad	Average; good	Under	**H. F. Smale, Warwick Castle Gardens, Warwick.**
	Under; bad	Average; good	Average; good	Under; bad	Under; bad	Under; bad	Average; bad	Under; bad	Average; good	**Chas. Harding, Ragley Gardens, Alcester.**
England, S. **BERKSHIRE**..................	Under; good	Over; good	Average; good.	Over; very good	Average; good	Under; bad	Average; good	Over; very good	....	**Stanley Reginald Gammon, Farley Court Gardens, Farley Hill, Reading.**
	Under; bad	Average; good	Average; good	Under	....	....	Average; good	Under; bad	Average	**Edw. Harriss, Lockinge Gardens, Wantage.**
	Under; good	Average; good	Under; bad	Average; good	Under; good	Under; bad	Average; good	Average; very good	....	**J. Kitt, Wasing Place Gardens, Nr. Reading.**
	Under; good	Average; good	Over; good	Under; bad	Average; good	Average; good	Average; good	Under; bad	Under; bad	**A. B. Wadds, Engelfield Gardens, Reading.**
	Average; good	Over; good	Average	Under; bad	Average; good	Over; good	Under; bad	Average; good	Under	**Henry Butcher, Wyld Court Gardens, Hampstead Norris, Newbury.**
	Under; bad	Average; good	Over; good	Under; good	Average; good	Average; good	Over; good	Under; bad	....	**Geoffrey Cooper, Ranworth, Malvern Road, Furze Platt, Maidenhead.**
	Under	Under	Average	Average	Average	Under	Under	Under	Average	**Thomas Wilson, Castle Gardens, Wallingford.**
DORSETSHIRE..............	Under	Under	Under	Average	Average	Under	Over	Average	....	**A. Booth, Down House Gardens, Blandford,**
	Under; bad	Average; good	Over; very good	Under; good	Over; very good	Under	Average; good	Under; good	Average; good	**Henry F. Maidment, N.D.H., Crichel Estate Gardens, Wimborne.**
	Under; bad	Average; bad	Average; good	Under; good	Average good	....	Under; good	Average; good	Under	**W. E. Axford, The Gardens, St. Giles.**
HAMPSHIRE.................	Under good	Under	Average	Under	Average	....	Over; very good	Average; good	Average	**George Ellwood, Swanmore Park, Swanmore.**
	Under; bad	Average; good	Average; bad	Under	Average; good	Under	Average; good	Average; bad	Average	**A. J. Legge, Dogmersfield Park Gardens, Winchfield, Basingstoke.**
	Under	Average	Average	Under; good	Average	Under	Average	Average	Under	**F. Gooch, Bossington House Gardens, Houghton, Stockbridge.**
	Under; good	Average; good	Average; good	Average; good	Over; good	....	Over; very good	Average; very good	....	**W. G. Osborne, Sutton Manor Gardens, Sutton Scotney.**

CONDITION OF THE FRUIT CROPS—(*continued*).

COUNTY.	APPLES.	PEARS.	PLUMS.	CHERRIES	PEACHES AND NECTARINES.	APRICOTS.	SMALL FRUITS.	STRAWBERRIES.	NUTS.	NAME AND ADDRESS.
KENT	under; bad	Average; good	Over; good	Under; bad	Average; good	....	Under; good	Under; good	Average; good	J. George Woodward, Barham Court, Tetlow, Maidstone.
	Under; good	Under; good	Average; very good	Under; good	Average; very good	Under; bad	Average; good	Average; good	Under	T. Cain, The Cottage, Dashwood, Gravesend.
	Under	Under	Average	Under	....	....	Average	Average	Average	George Lockyer, Mereworth.
	Under	Average	Average	Under	Average	....	Average; good	Average	Under	H. Stevens, Fairhill Gardens Tonbridge.
	Under; bad	Average; good	Over; very good	Under; bad	....	....	Average; good	Average; bad	Over; good	Edward A. Bunyard, The Bungalow, Allington, nr. Maidstone.
	Under	Average	Over	....	....	....	Over	Under	....	Chas. E. Shea, The Elms, Foots Cray.
	Under	Average	Average	Under	Average	Under	Average	Average; good	....	J. T. Shann, Betteshanger Park Gardens, Eastry,
	Under; good	Under; good	Average; good	Under; good	Average; good	Average; good	Under; bad	Under; bad	Under; bad	James Mayne, 32, Wigtown Road, Eltham,
MIDDLESEX	Under; bad	Average	Average	Under	Average; good	....	Under	Average; good	Under	H. Markham, Wrotham Park Gardens, Barnet.
	Under; bad	Under; bad	Under	Under	....	....	Average	Average	....	James A. Paice, Sunnyfield Gardens, Mill Hill.
	Under; bad	Under; bad	Under	Under; bad	Average	Average	Average; good	Under; good	....	G. H. Head, Fulwell Park Gardens, Twickenham.
SURREY	Under; good	Over; good	Average; very good	Average; bad	Under; bad	....	Average; good	Average; good	Under	James T. Weston, Hatchford End Gardens, Cobham.
	Under; good	Average; very good	Over; very good	Under; good	Average; very good	Under; bad	Over; very good	Under; good	Average; good	John H. Shipley, Haling Park Gardens, South Croydon
	Average; good	Over very good	Over; good	Under; bad	Under; good	Under; bad	Over; good	Average; good	Over; good	Will Tayler, Peace, Godalming.
	Average; very good	Over; good	Average; good	Under; bad	Average; very good	....	Over; very good	Under; bad	....	W. Everett, Burford Gardens Dorking
	Under; good	Over; good	Average; good	Under; bad	Under; bad	Under	Average; good	Under; bad	Average	Grigor Roy, Stoke D'Abernon Manor Gardens, Cobham
	Under	Under	Average	Under	Average	Under	Average	Under	Average	J. Collier, Gatton Park Gardens, Reigate.
	Under	Average; good	Average; good	Under	Average good	Under	Under; good	Under; bad	Over; good	F. Jordan, Ford Manor Gardens, Lingfield.
	Under; good	Under; good	Under; good	Average; good	Average; good	Over; good	Average; good	....	Average; good	Alan N. Raws, R.H.S. Gardens, Wisley, Ripley.
	Under; good	Average; good	Average; good	Under; bad	....	....	Average; good	Average; good	....	G. E. Twinn, Polesden Lacey Gardens, Dorking.
SUSSEX	Under	Average; very good	Average	Under; bad	Over; very good	Over; very good	Average	Under; bad	Average	Frederick Streeter, Petworth Park Gardens, Petworth.
	Under; good	Over; good	Average; good	Average; good	Average; good	Average; good	Over; very good	Under; bad	....	John W. Dickinson, Castle Gardens, Arundel.
	Under; good	Average; good	Over; very good	Under; good	....	....	Over; very good	Average; good	Average	E. M. Bear, Magham Down Hailsham.
	Under; bad	Average; good	Average; good	Under	Over; good	Average	Average; good	Under; bad	Average	A. Wilson, Eridge Castle Gardens, Tunbridge Wells.
	Under	Under	Average	Average	Average	....	Over	Over	....	E. Markham, Gravetye Manor Gardens, East Grinstead.
	Under	Average	Average	Under	Under	Under	Average	Average	....	W. H. Smith, West Dean Park Gardens, Chichester.
	Over; good	Average; good	Average; good	Under	Under	....	Average; good	Average; very good	Average	E. Neal, Tilgate Garden, Crawley.
WILTSHIRE	Under; good	Average; good	Under	Average; good	Average; good	Under	Average; good	Under	Average	M. A. Mason, Strangeways, Calne.
	Under; bad	Average; good	Average; good	Under; good	Average; good	Under; bad	Over; good	Average; good	Average; good	S. W. Tucker, Longford Castle Gardens, Salisbury.
	Under; bad	Average; good	Under; good	Average good	Average; good	Average; good	Under; bad	Average; good	Under; good	H. H. Mills, Fontill House Gardens, Tisbury.
England, N.W.										
CUMBERLAND	Under	Average	Average	Under	....	Average	Under	Under	....	J. Service, Holme Hill Gardens, Dalston.
WESTMORELAND	Under	Under	Under	Under	Average	....	Under	Under	....	Robert Dacre, Underley Gardens, Kirkby Lonsdale.
	Average	Under	Under; bad	Average	Average	....	Average	Average	....	James Jeffrey, Lowther Castle Gardens, Penrith.

CONDITION OF THE FRUIT CROPS—*(continued)*.

COUNTY.	APPLES.	PEARS.	PLUMS.	CHERRIES.	PEACHES AND NECTARINES.	APRICOTS.	SMALL FRUITS.	STRAW-BERRIES.	NUTS.	NAME AND ADDRESS
England, S.W.										
CORNWALL	Under; good	Average; good	Under; good	Average; good	Average; good	....	Average; good	Under; bad	....	**Harry Williams, Tolvean Gardens, Redruth.**
	Average; very good	Under	Average; good	Average; good	Under	Under	Average: good	Average; good	Under	**A. E. Meredith, Cotehele Gardens, St. Dominick.**
	Under; good	Average; good	Under; very good	Average; very good	Over; very good	Under; good	Average; very good	Under; very good	....	**E. E. Algate, Mount Edgcumbe Gardens, W. Plymouth.**
DEVONSHIRE	Average; good	Average; good	Average; good	Over; good	Over; good	Average; bad	Average; good	Under; bad	Average; good	**E. E. Bristow, Castle Hill Gardens, Filleigh, Barnstaple.**
	Average; bad	Over; good	Under; bad	....	....	....	Under; good	Under; bad	....	**J. A. Stidstow, Bishops-teignton Teignmouth.**
	Under	Over	Under	Average	Under	....	Average	Under	....	**Gilbert Sleep, Hartland Abbey Gardens, Hartland**
	Under	Average	Under	Under	Average	Over	Average	Average	Average	**P. C. M. Veitch, Royal Nurseries, Exeter.**
SOMERSET SHIRE	Under; good	Average; good	Under; good	Under; bad	Average; good	Under; good	Average; very good	Average; good	Over; good	**James Glasheen, Hestercombe Gardens, Taunton.**
	Average; good	Average; good	Under	Over; good	Over; very good	Under	Average; good	Average; good	Over; good	**J. Yandell, Haswell Park Gardens, Bridgwater.**
GLOUCESTERSHIRE	Under; very good	Under; good	Over; very good	Average; good	....	....	Over; very good	Over; very good	....	**John Ettle, 201, Henleaze Road, Westbury-on-Trym; Bristol.**
	Under; good	Average; very good	Over; very good	Average; good	Under; good	Under; good	Average; good	Average; good	Under	**W. J. Mitchell, Westonbirt Gardens, Tetbury.**
	Under; very good	Average; good	Under	Under	Over	Average	Over; good	Over; good	....	**S. W. Dance, Williamstrip Gardens, Fairford.**
	Under	Average good	Average; good	Under	Average; good	Under	Average; good	Average; good	Average	**John Benting, Tortworth Gardens, Falfield.**
	Under; bad	Over; very good	Average	Average	Average	Average	Average; good	Average; good	....	**W. J. Jefferies, Royal Nurseries, Cirencester.**
	Under; good	Under; good	Average; good	Average; good	Average; good	Average; good	Average; good	Under; good	Average	**G. H. Hollingworth, Shire Hall, Gloucester.**
	Under; good	Average; good	Average; good	Under; bad	Average; good	Average; good	Average; good	Under; good	Average	**Geo. H Emmett, Lydney Park Gardens, Lydney**
HEREFORDSHIRE	Under; good	Average; very good	Over; very good	Average; good	Over; very good	Under; good	Average; good	Average; bad	Average; good	**James B. Cooke, Ledbury Park Gardens, Ledbury.**
	Under	Average; very good	Average; good	Average;	Average; very good	....	Average	Average; very good	Under	**F. Roberts, Stoke Edith Park Gardens, Hereford.**
SHROPSHIRE	Under; very good	Under; very good	Under; good	Average; good	Under	Under	Average; very good	Under; good	Average	**Roger F. Jones, Oteley Hall Gardens, Ellesmere.**
	Under; very good	Over; very good	Under; good	Under; good	Under; bad	Average; good	Average; good	Average; good	Under	**George Robinson, Gannow Hill Gardens, Welsh Frankton, Nr. Oswestry.**
	Average; good	Average; good	Under	Under	Average; good	Average	Average	Over	Under	**A. Wardle, Loton Park Gardens, Alberbury, Nr. Shrewsbury.**
	Under; good	Under; good	Under; good	Under: good	Under	Under	Under; good	Under; good	Average; good	**E. F. Hazelton, Yeaton Peverey Gardens, Bomere Heath, Shrewsbury.**
WORCESTERSHIRE	Under; good	Under; good	Over; good	Over; good	Over; good	Over; good	Average; bad	Average good	....	**William Crump, V.M.H., Oakridge, Malvern Link.**
	Under; bad	Under; bad	Under; bad	Under; bad	Under; bad	Under; bad	Average;	Average, good	Average; good	**J. F. Simpson, Lapal House Gardens, Quinton, Birmingham.**
	Under	Under	Under	Under	....	....	Average	Under	Under	**Ernest Avery, Finstall Park Gardens, Bromsgrove.**
	Under; bad	Under; good	Average; good	Average; good	....	Average; good	Average; good	Average; very good	Average	**C. A. Bayford, Davenham Gardens, Malvern.**
WALES										
CARDIGANSHIRE	Over; good	Over; very good	Over; very good	Under	Over; good	....	Under	Average; good	....	**W. Phillips, Derry Ormond Gardens, Llangybi.**
	Under; bad	Average good	Under; good	Under	....	Under	Under; good	Under; good	Under	**D. H. Dunn, Hafod Gardens, Pontshydygroes, Ystrad Meurig, Nr. Aberystwith.**
CARNARVONSHIRE	Average	Average	Average	Under	....	....	Average	Average	....	**J. S. Higgins, Glynllivon Gardens, Llanwnda.**
DENBIGHSHIRE	Under; bad	Average; good	Average	Under	Under	Average	Under	Under	Under	**R. H. Crockford, Horsley Hall Gardens, Gresford, Nr Wrexham.**
	Under	Average	Average	Under	....	....	Average	Over; very good	Average	**J. A. Jones, Chirk Castle Gardens, Chirk, Wrexham.**
	Average	Average	Average	Average	Average	....	Average	Over; good	....	**F. C. Puddle, Bodnant Gardens, Tal-y-cafn.**

CONDITION OF THE FRUIT CROPS—*(continued.)*

COUNTY.	APPLES.	PEARS.	PLUMS.	CHERRIES.	PEACHES AND NECTARINES.	APRICOTS.	SMALL FRUITS.	STRAWBERRIES.	NUTS.	NAME AND ADDRESS.
FLINTSHIRE...............	Under	Average; good	Average;	Under; bad	Average; very good	Average	Average; very good	Average; bad	Average	J. L. Eversfield, Penbedw Hall Gardens, Nannerch.
GLAMORGANSHIRE	Average	Average	Under	Over	Under	....	Over	Good	Under	C. T. Warmington, Penllergaer Gardens, Swansea.
MONTGOMERYSHIRE ...	Under; good	Under; good	Under	Under	Under	Under	Average; good	Average; good	....	William Durrant, Brookland Hall Gardens, Welshpool.
IRELAND										
Ireland, N.										
MEATH	Under	Under	Average	....	Average	Average	Average	Over	....	Michael McKeown, Julianstown, Drogheda.
TYRONE	Average; good	Average; very good	Over; good	Average; good	....	....	Average	Average	....	Fred. W. Walker, Sion House Gardens, Sion Mills.
WESTMEATH	Under; bad	Under; good	Average; good	Average; very good	Under; bad	Under; bad	Under; good	Under; bad	Under	Wm. Allan, Pakenham Hall, Castlepollard.
Ireland, N.E.										
DOWN	Average; good	Average; good	Over; very good	Average; good	....	Average; good	Average; good	Over; very good	....	T. W. Bolas, Mount Stewart Gardens, Newtownards.
Ireland, S.										
CORK	Average; good	Under; good	Under; good	....	....	....	Under; bad	Under; bad	....	J. Dearnaby, 17, St. Patrick's Terrace, Magazine Road.
KILDARE	Under	Average	Under	Under	Under	Under	Average	Under	Average	Alexander Black, Carton, Maynooth.
KILKENNY	Under; good	Average; good	Under; good	Average; good	....	....	Under; good	Under; good	....	Henry Hall, Shankill Castle Gardens, Whitehall
CHANNEL ISLANDS										
GUERNSEY.....................	Under; good	Over; good	Under; good	Under; good	Average; good	....	Over; very good	Under; good	....	C. Smith and Son, Caledonia Nursery, Guernsey.
	Average	Average	Under	Under	....	....	Over; very good	Under	....	W. Mauger and Sons, Brookdale Nurseries.
JERSEY	Under; good	Average; good	Under; bad	Average; good	Under; good	....	Under; good	Under; bad	....	Geo. Harper, Springfield Nursery, St. Heliers.
ISLE OF MAN										
CASTLETOWN	Average; very good	Average; good	....	Under; bad	.. ..	... ...	Average; very good	Under; bad	. ...	S. E. Harling, The Great Meadow Gardens, Castletown
DOUGLAS	Under	Average	Under	Under	......	....	Average	Average	....	James Inglis, Peel Road Nursery, Douglas.

SUMMARIES OF THE HARDY FRUIT CROPS.

SCOTLAND.

Records.	Apples.	Pears.	Plums.	Cherries.	Peaches and Nectarines.	Apricots.	Small Fruits.	Strawberries.	Nuts.
Number of Records	29	28	29	27	14	8	29	29	1
Average	14	10	11	12	9	3	15	19	—
Over...	2	2	2	3	4	1	8	5	—
Under	13	16	16	12	1	4	6	5	1

ENGLAND.

Records.	Apples.	Pears.	Plums.	Cherries.	Peaches and Nectarines.	Apricots.	Small Fruits.	Strawberries.	Nuts.
Number of Records	165	165	164	164	124	104	165	163	104
Average	21	93	75	59	74	36	95	87	47
Over	1	22	23	13	15	12	36	16	12
Under	143	50	66	92	35	56	34	60	45

WALES.

Records.	Apples.	Pears.	Plums.	Cherries.	Peaches and Nectarines.	Apricots.	Small Fruits.	Strawberries.	Nuts.
Number of Records	9	9	9	9	6	4	9	9	5
Average	3	1	5	1	2	2	5	5	2
Over	1	1	1	1	1	—	1	2	—
Under	5	7	3	7	3	2	3	2	3

GRAND SUMMARY, 1926.

Records.	Apples.	Pears.	Plums.	Cherries.	Peaches and Nectarines.	Apricots.	Small Fruits.	Strawberries.	Nuts.
Number of Records	215	214	213	210	149	120	215	213	112
Average	43	112	93	77	87	43	121	113	50
Over	4	26	28	17	20	15	47	25	12
Under	168	76	92	116	42	62	47	75	50

IRELAND.

Records.	Apples.	Pears.	Plums.	Cherries.	Peaches and Nectarines.	Apricots.	Small Fruits.	Strawberries.	Nuts.
Number of Records	7	7	7	5	3	4	7	7	2
Average	3	4	2	4	1	2	4	1	1
Over	—	—	2	—	—	2	—	2	—
Under	4	3	3	1	2	—	3	4	1

CHANNEL ISLANDS.

Records.	Apples.	Pears.	Plums.	Cherries.	Peaches and Nectarines.	Apricots.	Small Fruits.	Strawberries.	Nuts.
Number of Records	3	3	3	3	2	—	3	3	—
Average	1	2	—	1	1	—	—	—	—
Over	—	1	—	—	—	—	2	—	—
Under	2	—	3	2	1	—	1	3	—

ISLE OF MAN.

Records.	Apples.	Pears.	Plums.	Cherries.	Peaches and Nectarines.	Apricots.	Small Fruits.	Strawberries.	Nuts.
Number of Records	2	2	1	2	—	—	2	2	—
Average	1	2	—	—	—	—	2	1	—
Over	—	—	—	—	—	—	—	—	—
Under	1	—	1	2	—	—	—	1	—

SUMMARY OF 1925 FOR COMPARISON.

Records.	Apples.	Pears.	Plums.	Cherries.	Peaches and Nectarines.	Apricots.	Small Fruits.	Strawberries.	Nuts.
Number of Records	166	163	163	158	108	82	166	166	93
Average	60	4	33	84	41	15	106	79	28
Over	8	—	4	6	1	1	51	32	1
Under	98	159	126	68	66	66	9	55	69

FRUIT GARDEN.

RASPBERRIES.

Raspberries have been unusually good in quality this season in south Wales. The soil here suits the Raspberry, being of a medium texture generally. The following comments concerning certain varieties are the result of careful observation.

Lloyd George.—In my judgment, this is our best variety. It is vigorous in growth and a prolific bearer. The first crop of fruit ripens well, but only in a very bright autumn can we induce the second crop to finish. Much has been said concerning the indifferent flavour of the variety Lloyd George, but I find no fault with it in that respect.

Royal.—This is a large Raspberry of excellent flavour and a fairly strong grower. I have two points of criticism to set against the above summary. The fruit does not ripen quite so well as it might do on the shady side, and the variety might bear a heavier crop of fruit.

Pyne's Royal.—This may be described as the best Raspberry introduced in recent years. The berries are very large, firm and pleasant to the taste. Pyne's Royal is a fairly heavy bearer; the growth is strong and appears to be disease resistant.

Superlative.—It is difficult to speak too highly of this old variety, which was introduced to cultivation nearly forty years ago, yet it shows no sign of deterioration. Some growers report constitutional weakness in their plants, but I think it is a weakness of stock and not of variety. The deep red berries are larger and of excellent culinary value.

Park Lane.—Though the matter of flavour is one for the individual to settle, I do not expect that many people will quarrel with the statement that this is the best flavoured Raspberry in cultivation. It is a pity that the fruit should be so soft. It is the one weakness of an otherwise perfect variety.

Hornet.—This variety is not a great success generally in South Wales. The fruits do not attain the size which I have seen at other centres, and the apical berries finish badly.

The Devon.—This is a most productive sort, the berries are firm and acceptable on the table. The growth of The Devon is free and disease resistant. If the fruits were of conical shape instead of being round the variety would be amongst the best. *Geo. H. Copley, N.D.H.*

A SELECTION OF DESSERT PLUMS.

To recommend certain varieties of fruit is to court controversy, as the flavour and general quality, particularly of hardy fruits, depends to a very large extent on the climate of the district wherein the trees are growing.

Of Plums, there are many varieties, and a few excel all others for their exquisite flavour. It is possible that the very best quality is not obtained in a dessert Plum unless it is grown under glass, and granted this is so, then so grown, the following varieties would hold a very high position amongst high-class table fruits. Grown on a south or west wall, these particular sorts, here in Gloucestershire, proved to be of delicious flavour, good form and fine colour.

Denniston's Superb is in season during the latter half of August; it is of medium size, round and greenish-yellow in colour. The flavour is delicious. The tree succeeds in bush form, although fan-trained specimens are better for a south or west wall. It is a prolific and regular bearer. This fine Plum was raised in America and introduced to commerce about one hundred years ago. It is self-fertile.

Jefferson's Gage is of exquisite flavour, in season during September; the fruit is large, oval, golden-yellow with red spots. The tree succeeds in all forms and is a reliable cropper; this also was raised in America about one hundred years ago and is self-sterile.

Coe's Golden Drop is ready for use at the end of September or during early October. The fruit is of medium size, oval in shape, and coloured golden yellow with a few small red dots; it is very juicy and of exquisite flavour; indeed, it is one of the very finest of all Plums. The tree should always be given the shelter of a south or west wall; it is a regular cropper and it is possible to keep the fruits in a fruit-room for a considerable time. I have seen this Plum put on the dessert table in fine form so late as December. This variety was raised by a Mr. Coe of Bury St. Edmunds at the end of the eighteenth century. It is self-sterile.

Purple Gage is, unfortunately, rather an uncertain cropper, but is a deliciously-flavoured Plum, in season during the first half of September. The fruits are flattened, round, light purple in colour with a few yellow dots. The growth is vigorous, the tree very hardy, and it succeeds well in bush form.

Comte D'Althan's Gage is a Plum of medium size, reddish-purple in colour, round in form and ripens about the middle of September. This variety is a most reliable cropper, and is good for a west wall. It was raised on the continent about 1870. This also is self-sterile.

Bonne Bouche Gage is a very old Plum of exquisite flavour, yet not frequently grown. The fruits resemble those of the old Green Gage; they are small, greenish-yellow, round and are in season during September. The tree crops well on a south wall.

Old Transparent Gage, an early September Plum, is an exquisite fruit, full of juice and very sweet; it should be grown on a south wall or in an orchard house. It was raised in France and is self-fertile.

Early and Late Transparent Gages, both raised by Messrs. Rivers and Son, are varieties of the highest quality, and should appeal to even the connoisseur.

Other excellent dessert Plums are Reine Claude de Bavay, Bryanston Gage and Kirke's Blue, the last a magnificent Plum of dark purple colouring with a rich bloom. *Ralph E. Arnold.*

VEGETABLE GARDEN.

PARSLEY.

The Parsley (Apium Petroselinum) is a hardy biennial, native of southern Europe, and said to have been cultivated in this country since 1548. It is probably the most widely-grown and extensively used herb in our gardens, and its leaves are in great demand for garnishing and for flavouring.

This constant daily demand for it during the whole of the year makes it an important crop, and continuous supplies can only be maintained by devoting considerable attention and forethought to its cultivation.

A good loam of considerable depth is best suited to the cultivation of Parsley, but where the soil is light, liberal quantities of manure should be dug in when preparing the ground. On light soils, too, care should be taken that the beds are thoroughly consolidated.

To maintain a continuous supply, sowings should be made from March to July, the earliest sowing providing leaves for summer use and the later ones for autumn, winter and spring supplies. Germination is invariably slow, a period of four or five weeks being not at all unusual. The seeds should be sown thinly in drills made about fifteen inches apart, and the plants thinned to eight or ten inches in the rows, for unless ample space is allowed for the full development of the plants, large leaves of good substance will not be obtained.

As Parsley is somewhat sensitive to cold it is necessary, in order to meet a continuous winter demand, to put frames over part of the bed sown about midsummer for winter and spring supplies. To help maintain a winter crop also, a late sowing may be made at the foot of a south wall, where the plants may be sheltered in periods of very cold weather.

In Germany, where the climate is much less suited to the cultivation of the Parsley than it is in this country, a large-rooted kind is extensively grown, the thick, fleshy roots forming the edible part of the plant. These roots are lifted and stored in sand for winter use and they are extremely useful for flavouring. *A. P. C.*

SOCIETIES.

DUMBARTONSHIRE SWEET PEA.

The ninth annual exhibition of the society, held at Helensburgh, on July 31, was the finest show since the society was inaugurated in 1911. There were eighteen classes for Sweet Peas, ten for Roses, three for Carnations, and ten in the decorative classes and in each section the quality was of a high standard and competition generally was keen.

In the open Sweet Pea classes Mr. James Paul, Killearn, secured leading honours in the contests for eighteen and twelve vases. He experienced greater opposition than was the case at Falkirk, but his flowers had improved in colour and size. This was particularly the case with such varieties as Hebe, Picture, Sunset, Miss California, Charming, Elegance, Mammoth and Youth, but the second prize lot staged by Mr. James Jack, Levenford Lodge, Dumbarton, ran him close with a collection in which Gold Crest, Tom Sykes, Wembley, Grenadier, Matchless, aimd Mrs. C. W. J. Unwin were prominent. The third prize in the premier class went to Mr. John A. Grigor, Banff. There was little to choose between the Killearn twelve vases and those of Mr. Frank Dunbar, Cardross, which were placed second. Dainty Maid, Crusader, Peggy, Magnet, and Ivory Picture, were the best of the former and Hebe, Sky, 2LO, Fair Lady, and Mary Pickford were outstanding in the latter collection.

Mr. Dunbar, however, beat Mr. George Bollingall, Dumbarton, in the gardeners' section for twelve vases with a strong set which included the best vase in the show. The class for nine vases resolved itself into a competition between the Dumbarton amateur and Mr. Alex. Anderson, Rosneath, and while the latter had to be content with second prize, he was compensated by winning in the classes for single vases for lavender and pink with well-grown specimens of Wembley and Mrs. C. W. Unwin. The prize for a vase of cerise flowers went to Mr. A. R. Mitchell, Cardross, who staged Charming in fine condition. Mr. Dunbar added to his successes by winning first prize for three vases, which consisted of Lilly Elliot, a new white, Charming and Miss California.

In the amateurs' section Mr. George Blackie excelled in the classes for six and three vases, the latter being conspicuous by reason of the excellence of Gold Crest, Wembley and Royal Pink. Other prize-winners in this section were Messrs. James Bell, Dumbarton, Thomas Johnston, Helensburgh; James Maltman, Shandon; and Thomas Currie, Dumbarton.

The awards in the open class for six blooms of Roses were: first, Mr. James Fairley, Cairneyhill, Fife; second, Mr. Sebastian Rennie, Dunfermline; and third, Mr. John Smellie, Helensburgh. The best vase in the show was Mrs. Henry Bowles, included in the first prize lot. Principal prize winners in the gardeners' and amateurs' section were Messrs. A. Borthwick, Row, Frank Corrie, John Bain, and William Holmes, Helensburgh.

Carnations were not numerous, but the quality of the blooms attained a high standard of excellence, particularly the first prize blooms staged by James Smith, Darvel, in the classes for six and three vases. He also defied opposition with a vase arranged for decorative effect for which he also received special recognition as the best vase in the show

The decorative classes were of an interesting and attractive character. The services of two additional judges had to be requisitioned in order to decide the merits of the respective bowls of mixed Sweet Peas, the chief prize being won by Mr. Neil Galbraith. Two shower bouquets of Sweet Peas, for bride and bridesmaid, attracted a large entry, and keen competition, which resulted in the first award going to Miss Grace Campbell, Dumbarton. Other prizes were won by Messrs. Wm. Holmes, Thos. Johnstone, Robert Millar, Donald McNeil and D. H. Davidson, and Miss Robertson,

In the trade section a Large Gold Medal

was awarded to Messrs. Austin and McAslan for a grand exhibit of Roses arranged on a twenty foot space; Gold Medal to Messrs. Dobbie and Co., Edinburgh, for an extensive collection of Collerette Dahlias; Silver Medal to Messrs. James Fairlie and Co., Cairney Hill, (collection of Roses), Mr. D. G. Purdie, Glasgow (Sweet Peas, Primulinus Gladioli and herbaceous flowers); and Silver-gilt Medal to the Scottish Wholesale Co-Operative Society (collection of Roses).

Colonel Thorne, M.P., presided at the opening proceedings, and Mrs. Menzies, wife of Sheriff Menzies, in a graceful speech on Sweet Peas, declared the exhibition open.

BERMONDSEY AND ROTHERHITHE HORTICULTURAL.

The annual exhibition of this society was held at the Town Hall, Spa Road, Bermondsey, and opened jointly by Dr. A. Salter, J.P., M.P., and Ben Smith, Esq., M.P., both representatives of the Borough.

Entries for the various classes were satisfactory, keen competition taking place throughout the competitive sections. The class for Aspidistras proved very popular and filled considerable space. A welcome feature was the efforts of the schools in staging locally grown exhibits, a number of which demonstrated different phases of germination.

The Council's Parks'-Department filled a space of twenty square yards with considerable effect. Plants noticed were Phormiums, Eucalyptus, Petunias, Balsams, Dahlia Coltness Gem, Godetias, Stocks, Phacelia, Coleus, Eulalia zebrina, E. japonica, and Elymus glauca; the corners were filled with Viola Moseley Perfection, with semi-circles of V. White Swan between.

Trade exhibits included a fine display of Hydrangeas staged by Mr. H. J. Jones, of Lewisham, for which he was awarded a Silver Cup. Mr. A. Dawkins, Chelsea, exhibited a good collection of Gladioli, various Liliums, and Statice sinuata, and was awarded a Gold Medal. Mr. Downer, of Chichester, tsaged Lupins, Salvia virgata, S, nemorosa, Eryngium creticum, E. Drayton, Lavatera rosea, etc., and was awarded a Silver Medal.

SAFFRON WALDEN HORTICULTURAL.

Established in 1819, the Saffron Walden Horticultural Society is one of the oldest in the country. During the last few years it has taken on a new lease of life and its annual show, held on Thursday of last week, in Lord Braybrooke's park, at Audley End, was admittedly one of the best in the eastern counties.

The entries showed an increase over last year and the quality of the exhibits was of a very high standard. Notable in the open classes were the groups of outdoor cut flower (named), in which the first prize carried with it a Silver Challenge Cup, presented by Mr. C Engelmann. It was won for the third year in succession by Mr. H. H. Claydon, a noted amateur of Bishop's Stortford, and he thus becomes the absolute owner of the cup. A Silver Challenge Cup presented by Messrs. J. Vert and Sons for the best exhibit of cut Roses was easily won by Miss Gibson, of Hill House, Saffron Walden (gr. Mr. G. Barker), with a very choice display of five hundred blooms in fifty varieties. Mr. H. H. Claydon came second, and Mr. W. H. Scott, an amateur grower of Saffron Walden, third.

As usual, a feature of the show was the ladies' dinner table decorations. There were two classes of these and both drew a large number of competitors. The first prize, and a Silver Challenge Cup, presented by Lady Babington Smith, were won by Mrs. G. Barker with a very pretty table decorated with Heuchera, Lavender, Berberis, miniature Pelargoniums, Francoa ramosa and Grasses; and in the class for ladies who had not previously won a prize Miss M. E. Sant came first with a table decorated with cream Scabious, Dorothy Perkins Rose, Lavender and Grasses. The ladies' baskets, vases, and bowls of cut flowers and the ladies' sprays were a great attraction.

Mr. G. Barker was first with a very choice decorated table of fruit, and Lady Babington Smith (gr. Mr. W. Chisnall), showed a very fine collection of twelve kinds of vegetables.

There were some magnificent non-competitive exhibits. A handsome group of stove and greenhouse flowers and plants came from the gardens of the President, Captain F. J. O. Montagu, of Shortgrove (gr. Mr. A. Foakes). Messrs. Engelmann, Ltd., made a magnificent show of their Carnations, which occupied the whole of a large marquee; there were 450 dozen blooms, in forty varieties. Messrs. J. Vert and Sons had a particularly fine exhibit of fifty varieties of choice fruits, which occupied the whole length of a large marquee, and they also made a tasteful display in groups of stove and greenhouse flowers and plants. There were also choice displays of Sweet Peas by Messrs. R. Bolton and Son, of Birdbrook, Halstead, and of hardy cut flowers by Mr. W. Wells, Jun., of Merstham.

MORAY FIELD CLUB.

Although the attendance was smaller than usual owing to the holiday season, it was a very enthusiastic company that attended the most recent outing to Kinloss. Led by the genial president, Rev. George Birnie, B.D., and Mr. J. J. Burgess, M.A., the secretary, a delightand profitable afternoon was spent in examining the flora of the Carse, at Kinloss, where several interesting seaside plants were found, among them the beautiful rose-coloured Centaury (Erythraea littoralis) which belongs to the same order as the Gentians, and which at one time was held in high repute in this part of Morayshire for its tonic properties. In the days of our grandfathers the villagers of Kinloss and Findhorn were wont to collect the plant, dry it, and drink an infusion of the leaves which was considered of great value as a "stomachic." The Centaury grows abundantly on the Carse, and was in beautiful bloom during the visit. An interesting plant discovered near Kinloss Schoolhouse was the Celery-leaved Crowfoot (Ranunculus sceleratus), which is comparatively rare in Morayshire, although it is not uncommon in some counties farther south. The beautiful weather prevailing added not a little to the enjoyment of the outing.

ALKIRK ROSE.

The seventh annual exhibition of the Falkirk and District Rose Society was held on July 24, in the Town Hall. Despite the unfavourable weather which terminated in a torrential rainfall that registered one-and-a-quarter inch in four-and-a-half hours preceding the show, the competitive classes were well represented, and the quality of the blooms was surprisingly good under the circumstances.

The prize schedule contained fifty-four classes, allocated as follow:—Roses, thirty; Sweet Peas, eleven; Pansies and Violas, ten; and Carnations, three.

In the premier class for a collection of Roses arranged in a space six feet by three feet, Messrs. D. and W. Croll, Dundee, were first with an exhibit arranged in pillars, baskets and vases, which was overcrowded and gave the impression that it had been hurriedly staged. The outstanding feature of the display was a central group of Shot Silk, surrounded, by Betty Uprichard, Lady Inchiquin, Sunstar, Hortulanus Budde and Independence Day with an edging of the Polyantha variety Orange King. Messrs. Thomas Smith and Son, Stranraer, were the runners up, but their grouping also lacked finish. Their best Roses consisted of pillars of Mabel Morse, Isobel, and Emma Wright, baskets of Mrs. Wemyss Quin, Frau Karl Druschki, Mrs. Henry Morse, and Madame E. Herriot, with a small central vase of Wilhelm Kordes.

Messrs. Croll also excelled over Messrs. Smith in the class for six baskets, but in the open section the latter firm carried everything before it. The class for twenty-four blooms in not fewer than eighteen varieties created keen competition and the Stranraer exhibit contained some of the best Roses in the show. Messrs. Croll were placed second, and the third prize was awarded to Mr. Sandy Dickson, Dundonald, Belfast.

Messrs. Smith defeated Mr. Dickson in the class for twelve blooms, with fine examples of Ruth Esmee, Souvenir de George Beckwith, Lady Inchiquin and Mrs. Charles Lamplough, while the placing was repeated in the class for twelve blooms of crimson Roses.

The gardeners' and amateurs' classes were well contested, and probably the best vases in the section were those staged by Messrs Andrew Zuill and William Short. Other prominent prize-takers were Messrs. D. Montgomery, Bainsford; A. Hay, Torphechan; James Boyd, Alex. Miller, Kilsyth; John Love, Henry McVey, Carronshore; Mrs. McQueen, Darroch; and Mrs. C. Gillan, Dunmore.

An interesting feature of the Sweet Pea section was the re-appearance of Mr. James Paul as a competitor after an interval of three years. He excelled in the open classes for eighteen, twelve, and six vases respectively, his best flowers being Grenadier, Peggy, Dainty Maid, Mammoth, 2 L O, George Shawyer, Charming, Youth and Leslie Rundle. Messrs. Torrance and Hopkins, Busby, were second.

The principal prize-winners in the gardeners' and amateurs' classes were Messrs. M. McQueen, Darroch; E. Thomson, Larbert, and D. Wright, Falkirk.

Mr. Paul was successful with twenty-four Show Pansies, twenty-four Fancy Pansies, and twelve Fancy Pansies, and the other honours in this section were shared by Messrs. James Paterson, Philipstown; A. Frater, Broxburn, and H. Robertson, Kelty.

The special prize for the best Rose in the show was awarded to a bloom of George Dickson, staged by Mr. Sandy Dickson, and Hebe, shown by Mr. Paul, was considered to be the best Sweet Pea.

The only Gold Medal of the Society was awarded to Messrs. Austin and McAslan, Glasgow, who showed forty-one varieties of Roses in baskets and tall tube stands.

HARROGATE.

The Horticultural section, held in conjunction with the Yorkshire Show at Harrogate, on July 21, 22 and 23, was a great success. Liberal prizes were offered and competition keen in the classes for Begonias, Sweet Peas, Roses, hardy perennial plants and cut flowers.

No fewer than six excellent exhibits, each thirty feet by ten feet were staged in the latter class along one side of the tent. It is doubtful if better arranged or groups of finer quality have been seen in competition at any show.

The show was visited by Princess Mary, and a large number of visitors took the keenest interest in the various exhibits. In the class for a group of miscellaneous plants in or out of bloom, in a space not exceeding 350 square feet, the first prize of £40 was awarded to Messrs. J. Cypher and Sons, Cheltenham, for a lightly arranged group of brilliantly coloured Codiaeums and Dracaenas, with Odontoglossums, Cattleyas, and other well-grown flowering plants. Mr. W. A. Holmes, Chesterfield, was a close second with a well-arranged group.

The class for Begonias was well contested by two local exhibitors, both with flowers of fine quality. Mr. Herbert Frankling was first and Mr. James Armitage second. Messrs. Engelmann won the first prize of £15 for a collection of cut blooms of Carnations.

The best group of perennial plants and cut blooms was shown by Messrs. Artindale and Son; Messrs. Bees, Ltd., were placed second, and Messrs. Harkness and Co., third.

Messrs. Herd Bros., Penrith, excelled for a collection of Sweet Peas arranged in a space twenty feet by five feet. Mr. T. Wadworth, Bishop Wilton, York, had the best twelve varieties of Sweet Peas.

The three groups of Roses, each twenty feet by five feet, were very fine and in great variety. Messrs. C. GREGORY were placed first; Mr. L. ROBINSON, Nottingham, second, and Messrs. BEES, LTD., third

Trade exhibits were a strong feature. *Large Gold Medals* were awarded to Messrs. ALLWOOD BROS., for a magnificent group of Carnations and Dianthus Allwoodii; Messrs. ALEX. DICKSON AND CO., Newtownards, for Roses in great variety, and Messrs. J. BACKHOUSE AND CO., York, for a rock and water garden.

Gold Medals were awarded to Messrs. MANSELL AND HATCHER, Leeds, for Orchids; Messrs. J. FORBES, Hawick, for Pentstemons, Carnations and Pansies, and Messrs. A. GREENWOOD AND CO., Wetherby, for a rock garden.

Silver-gilt Medals were awarded to Messrs. HEWITTS, Birmingham, for Delphiniums; Messrs. TOOGOOD AND SONS, for Gladioli; Messrs. KENT AND BRYDON, for a formal garden, and Messrs. DANIELS BROS., for herbaceous flowers and Sweet Peas.

Silver Medals were awarded to Messrs. MAXWELL AND BEALE for a rockery; Mr. A. WEDGEWOOD, for a rockery; Mr. ROGERS, Pickering, for a rockery; Messrs. W. WELLS, JUN., for herbaceous flowers; Messrs. BAKERS, for herbaceous flowers; Messrs. ISAAC HOUSE AND SONS, for Scabious; and Messrs. WHITAKER AND WILSON, for Sweet Peas.

BADSEY FLOWER SHOW.

THERE was a magnificent display of flowers. fruit and vegetables produced in the fertile Vale of Evesham, at Badsey Flower Show, which was held on Wednesday, July 21. The total number of entries was 810—a figure falling but twenty-two short of the record achieved last year. This was the thirty-second annual show and, like many of its predecessors since the war, it was marred by rain, several storms occurring during the day. The most successful exhibitor was Mr. A. C. SPARROW, who, after having won the Silver Challenge Cup four times previously, secured the trophy outright by scoring a total of fifty-nine points.

The entries in the floral section were very numerous, and here Sir JULIUS SLADDEN, Mr. G. C. LEES-MILNE and Mr. A. C. SPARROW were very successful entrants. Mr. J. E. KNIGHT, who was runner-up for the Cup, scored many points in the produce section.

ANSWERS TO CORRESPONDENTS.

NAMES OF PLANTS.—*P. L.* Agave americana variegata. The spots on the leaves are not due to a fungous attack, but may be the result of scorching, due to drops of moisture acting as lenses and concentrating the sun's rays. *H. E. M.* Arum Dracunculus, a native of southern Europe. *E. M.* The yellow flower is Cassinia fulvida; the white, Spiraea canescens, and the other is Leycesteria formosa. *Reader.* The edging plant is Armeria maritima; the tree a form of Alnus glutinosa; the shrub, Lonicera nitida, and the other was too withered to identify. *E. L. W.* 1, Veronica salicifolia; 2, V. speciosa var. lilacina; 3, V. speciosa var. azurea; 4, V. Hectori; 5, V. elliptica; 6, V. speciosa var. purpurea; 7, Pentstemon Southgate Gem.

WHITE FLY PARASITE.—*L. H.* The scales of white-fly, which have turned black, are parasitised by a species of Chalcid Wasp of very minute size. A very high percentage of pupae are parasitised, and it is possible that, if bred on a large scale, the parasite might be used economically. The actual identity of this Chalcid still remains to be determined; it has probably not been met with before in this country.

Communications Received.—A. W. H.—R. de B.—T.—G. H.—H. A. M.—F. J.—F. M.—J. S.—W. A.—F. K. W.—J. O'B.—A. E.—W. G. O.—R. T.

MARKETS.

COVENT GARDEN, Tuesday, August 3, 1926.

We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Tuesday by the kindness of several of the principal salesmen, who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general average for the week preceding the date of our report. The prices depend upon the quality of the samples, the way in which they are packed, the supply in the market and the demand, and they may fluctuate, not only from day to day, but occasionally several times in the day.—EDS.

Plants in Pots, etc.; Average Wholesale Prices.

(All 48's except where otherwise stated).

	s. d. s. d.
Adiantum cuneatum per doz.	10 0–12 0
—elegans	12 0–15 0
Aralia Sieboldii	9 0–10 0
Araucarias, per doz.	30 0 42 0
Asparagus plumosus	12 0–18 0
—Sprengeri	12 0–18 0
Aspidistra, green	36 0–60 0
Asplenium, doz.	12 0–18 0
—32's	24 0–30 0
—nidus	12 0–15 0
Cacti, per tray —12's, 15's	5 0– 7 0
Crassulas, 48's, per doz.	24 0–30 0
Crotons, doz.	30 0–45 0
Cyrtomium	10 0–25 0
Fuchsias, 48's, per doz.	12 0–18 0
Heliotrope 48's per doz.	12 0–15 0

	s. d. s. d.
Hydrangeas, pink, 48's, per doz.	24 0–30 0
—white, 48's per doz.	24 0–70 0
—blue, 48's per doz.	24 0–36 0
Ivy Geranium, 48's, per doz.	15 0–18 0
—60's per doz.	9 0–12 0
Lilium longiflorum (Harrissii) 48's, 32's per doz.	21 0–30 0
Marguerites, 48's per doz.	18 0–21 0
Nephrolepsis in variety	12 0–18 0
—32's	24 0–36 0
Palms, Kentia	30 0–48 0
—60's	15 0–18 0
Pteris, in variety	10 0–15 0
—large, 60's	5 0– 6 0
—small	4 0– 5 0
—72's, per tray of 15's	2 6– 3 0
Roses, Polyantha 48's, per doz.	24 0–30 0

Cut Flowers, etc.: Average Wholesale Prices,

	s. d. s. d.
Achillea The Pearl per doz. bun.	3 0– 4 0
Adiantum decorum, doz. bun.	8 0–10 0
cuneatum, per doz. bun.	6 0—8 0
Asparagus plumosus, per bun., long trails, 6's	2 0—3 0
med. sprays	1 6—2 6
short...	0 9—1 3
—Sprengeri, bun. long sprays...	1 6—2 0
med. ,,	1 0—1 6
short ,,	0 4—1 0
Asters, white per doz. bun.	4 0—6 0
— coloured, per doz. bun.	4 0—6 0
Carnations, per doz. blooms	1 0—2 6
Chrysanthemums, white, per doz.	2 6– 3 0
—bronze ,,	2 0—2 6
— ,, per doz. bun.	9 0–12 6
—yellow. per doz. blooms	3 0—4 0
—yellow, per doz. bun.	8 0–10 0
Clarkia, per doz. bun.	4 0—5 0
Coreopsis, per doz. bun.	1 0—1 6
Cornflower, pink, per doz. bun.	1 0—1 6
—blue, per doz. bun.	1 3—1 6
Croton, leaves per doz.	1 9—2 6
Daisy, Giant White per doz. bun.	2 6—3 0
Fern, French, per doz. bun.	10 0–12 0
Forget-me-not, per doz. bun.	6 0—8 0
Gaillardias, per doz. bun.	2 6—3 0
Gardenias, 12's, 18's per box	6 0—9 0
Gladiolus, The Bride, per doz. bun.	8 0–12 0
—primulinus 6's, per doz. bun.	9 0–12 0
—various Giant varieties, per doz. spikes	2 0—3 0
Godetia, per doz. bun.	4 0—5 0

	s. d. s. d.
Gypsophila elegans	5 0—6 0
—paniculata	8 0–10 0
Heather, white, per doz. bun.	10 0–12 0
pink, per doz. bun.	9 0–12 0
Lapageria, white, per doz. blooms	2 6—3 6
Lilium longiflorum long, per doz.	2 0—2 6
Lilium speciosum rubrum, long, per doz. blooms	2 6—3 0
—short doz. blooms	1 0—1 6
—lancifolium album, per doz. blooms	1 0—2 6
Lily-of-the-Valley, per doz. bun.	18 0–30 0
Montbretia, per doz. bun.	4 0—6 0
Orchids, per doz.	
—Cattleyas	30 0–36 0
Roses, per doz. blooms—	
—Madame Abel Chatenay	1 6—2 0
—Molly Sharman Crawford	1 6—2 6
—Richmond	1 6—2 6
—Columbia	2 0—2 6
—Golden Ophelia	1 6—2 6
—Sunburst	1 6—2 6
—Mrs. Aaron Ward	1 6—2 0
—Madame Butterfly	2 0—3 0
Scabiosa caucasica, per doz. bun.	4 0—5 0
Smilax, per doz. trails	4 0—5 0
Statice latifolia, per doz. bun.	10 0–12 0
—sinuata per doz. bun.	4 0—6 0
—Suworowii	6 0—9 0
Stephanotis, per 72 pips	3 0—3 6
Stock, double white, per doz. bun.	4 0—6 0
Sultan, white per doz. bun.	3 0—6 0
—yellow, per doz. bun.	3 0—6 0
—mauve, per doz. bun.	3 0—6 0
Sweet Peas, per doz. bun.	4 0—9 0
Violas	1 0—1 6

REMARKS.—Supplies in this department have been very heavy during the past week. Carnations, Roses, Liliums and other choice flowers were in rather more demand on Friday and Saturday last, but this did not cause any advance in prices, the supplies being ample for all requirements. Asters and Chrysanthemum are improving in quality and becoming more numerous; more coloured Asters are available and yellow blooms are now added to the list of Chrysanthemums. There is a large supply of Statice sinuata, consisting of mauve white, pink and yellow sorts. S. latifolia and incana, are now arriving in excellent condition. There is also an ample supply of Gypsophila paniculata, but the double variety, flore pleno, is now preferred to the type. The large consignments of double white Stock have generally been in a very bad condition during the past week, possibly owing to the heavy rains and to packing the flowers in a wet condition, consequently many boxes have reached the market practically unsaleable; fortunately an increased supply of White Asters relieved the situation for those requiring blooms for making-up purposes.

Fruit Average: Wholesale Prices.

	s. d. s. d.
Apples, English—	
—Beauty of Bath, per ½ bushel	4 0—7 0
—Gladstone, per ½ bushel	2 6—5 0
—Early Victoria, per ½ bushel	2 6—5 0
—Derby, per ½ bushel	2 6—5 0
—Stirling Castle, per ½ bushel	2 6—6 0
Apples, New Zealand—	
—Sturmer	10 0–11 0
—Newtown	— 10 0
—Dunn's Seedling	9 0–10 0
—Statesman	9 0–10 0
Apples, Tasmanian	9 0–10 6
Bananas	14 0–22 6
Black Currants—	
—English, per lb.	0 9—1 0
Cherries (English)—	
—Black, per ½ sieve	10 0–18 0
—August Hearts	— —
—Napoleon	6 0–26 0
Figs, forced, per doz.	4 0–10 0
Gages, Spanish, per ½ sieve	8 0–18 0
—French	3 6—5 0
Gooseberries—	
—Kent, halves—	
—Dessert	4 0—7 0
—Cooking	1 6—2 6
—Leveller, per lb	0 4—1 0
Grape Fruit	50 0–52 6

	s. d. s. d.
Grapes, English Black Hamburgh	1 2—2 0
—Gros Colmar	2 0—2 6
—Alicante	1 3—2 0
—Muscat	2 6—4 6
Lemons, Messina, per case	15 0–20 0
—Naples, box	15 0–20 0
Melons—	
—Forced Guernsey special	2 0—3 6
—Canteloup	2 0—6 0
—others	2 0—4 0
Oranges—	
—Californian	20 0–22 0
Peaches, Belgian, per doz.	3 0—6 0
—English, per doz.	4 0–12 0
—Italian, per tray	2 0—3 6
Pines	2 0—4 0
Plums, English—	
—Early Rivers, per ½ sieve	4 0—5 0
—Czar, per ½ sieve	4 6—5 0
Plums, Spanish, per crate	5 0—8 0
—French	4 0—6 0
—French, per ½ sieve	4 0—6 0
—Royal	6 0—9 0
Raspberries—	
—Special dessert, per lb.	1 3—1 6
—others, per 4 lb chip	2 0—3 0

REMARKS.—A moderately good holiday demand kept business moving steadily during the past week. The quantities of fruit from various sources are considerable, but prices are not good. Hot-house Grapes are more plentiful and quoted easier. Peaches, Nectarines, Figs. and Melons are not in such keen demand as of late, and slightly lower prices are being taken. English Apples are available, some fairly good Beauty of Bath and Mr. Gladstone selling well. First-grade cookers are also wanted. Plums are plentiful, mainly from France and Italy, and are selling very cheaply. This competition is affecting the first consignments of English Early Rivers and Czars, the prices of which are comparatively low. French Greengages are abundant and cheap. A few English Cherries are still available, some fruit realising good figures. Gooseberries are in slow demand, except for some especially fine berries. Home-grown Tomatos have been in short supply, but Dutch produce is plentiful. Cucumbers also are on the scarce side and meet a slightly better trade. Salads are plentiful and cheap. Green vegetables are in fair demand. The Potato trade is steady with good supplies available.

GLASGOW.

THE outstanding feature of the market has been the glut, with an attendant slump in prices of Tomatos. Daily deliveries were on an exceptionally heavy scale, with the result that good qualities of Ailsa Craig, Balch's Gem, Kondine Red, and other popular varieties were offered down to 4d. and 5d. per lb, which is exactly half the values ruling at the close of the previous week. A few lots of special graded fruit made 6d. as against 1/- on the previous Friday. Guernsey Tomatos declined to 3/- per basket, and Dutch to 2/6 per box. Scotch Strawberries are becoming scarce, and were worth from 6d. to 1/- per lb, while Black Currants continued very firm at 1/- to 1/4 per lb for Scotch, and 10d. to 11d. for English. Raspberry supplies were on the short side and prices range from 9d. to 1/2 per lb; Red Currants sold at 4d. to 6d.; Gooseberries, 2/6 to 3/6 per half-bushel; Early Rivers Plums, 8/- to 10/-; Early Emneth Apples, 4/- to 6/-; French Royal Plums, 8/- to 9/-; Grapes. 7/- to 9/-; Spanish, 12/- to 16/-; Peaches, 3/- to 8/- per dozen; Black Hamburgh Grapes, 1/- to 1/6 per lb; Spanish Melons (24's), 15/- to 16/- per case; Californian Bartlett Pears, 26/- to 30/-; New Zealand Apples (Sturmer Pippins). 9/- to 10/6 per case; South African hard Oranges. 22/- to 25/-; Sunkist. 28/- to 30/-.

There was little life in the cut flower market, and price movements were narrow and unimportant. A common price for Sweet Peas and Morning Star was 1/- per box; Marguerites averaged 1d. to 2d. per bunch; Asters, 1/- to 2/- per doz.; Gypsophila, 1d. to 3d.; Gladioli, 1/- to 3/- per doz.; Carnations, 1/6 to 2/6; Roses 2/- to 3/-; Lilium Harrissi, 2/6 to 3/- per bunch; Asparagus 9d. to /1-; and Smilax, 1/-.

The vegetable section was quietly steady, Cucumbers being quoted at 4/6 to 7/- per doz.; Cauliflower, 2/- to 5/-; Lettuce, 9d. to 2/-; French Beans, 2d. to 3d. per lb; Broad Beans, 1/6 to 2/- per stone; Mint. 2/- to 3/- per dozen bunches; and Mushrooms, 2/6 per lb.

THE

Gardeners' Chronicle

No. 2068.—*SATURDAY, AUGUST* 14, 1926.

CONTENTS.

- Afforestation and birds 122
- Alpine garden—
  - Codonopsis ovata ... 128
  - Parochetus communis 128
  - Ramondias 128
- Bulb garden—
  - Hardy Crinums ... 126
  - Lilium giganteum... 126
  - Lilium regale ... 126
- Cabbage butterflies ... 129
- Calcot Park, Reading 122
- Celery fly 129
- Cuthbertson, Mr. Wm. 121
- Flower garden—
  - Hemerocallis ... 126
  - The Hemsley Sidalceas 127
  - Venidium calendulaceum 127
  - Zauschneria californica 127
- Forestry, Government grant for 122
- Forestry, progress in British 123
- Fruit crops in the Netherlands 122
- Fruit garden, market 132
- "Gardeners' Chronicle" seventy - five years ago 123
- Indoor plants—
  - Celosia plumosa ... 128
  - Cyclamen 128
- John Innes Institute, new director of the 121
- Kew, notes from ... 131
- National Rose Society's dinner 122
- Obituary—
  - Hamilton Fellows, Mrs. 139
  - H. Joy, Mrs. ... 139
  - Henry Ruck ... 139
  - W. Wallace ... 139
- Orchid notes and gleanings—
  - Cattleya Brightness 128
  - Odontoglossum crispum var. Mrs. Stanley Baldwin 128
- Oxford, open spaces in 123
- Potato, intervarietal differences in the ... 134
- Prince of Wales and the British Association 121
- Rose show at Ghent ... 122
- Scottish Plant Breeding Society... ... 123
- Societies—
  - Kingswalden Horticultural 139
  - Manchester & North of England Orchid 139
  - Royal Horticultural 137
  - Royal Horticultural of Ireland ... 138
  - Scottish National Sweet Pea, Rose and Carnation ... 136
- Southport Flower Show 122
- Sweet Pea trials, Scottish 132
- Trees and Shrubs—
  - Indigofera Gerardiana 132
  - Liriodendron tulipifera 132
- Viceregal Gardens, Simla 132
- Ward's, Mr. F. Kingdon, ninth expedition in Asia ... 130
- Watkins, Mr. Alfred, presentation to ... 122
- Week's work, the ... 124
- White fly, the destruction of 136
- Wisley, awards to flowers at 121

ILLUSTRATIONS.

- Cabbage butterflies: eggs, caterpillars and chrysalides of 129
- Hall, Sir Daniel, portrait of 122
- Hemerocallis E. A. Bowles, 127; H. Margaret Perry 126
- Lilium giganteum at Bishops Hall, Romford... ... 125
- Odontoglossum crispum var. Mrs. Stanley Baldwin ... 123
- Potato tubers, types of 134
- Rose Duchess of Atholl 131

Average Mean Temperature for the ensuing week deduced from observations during the last fifty years at Greenwich 61·8°.

Actual Temperature—

The Gardeners' Chronicle Office, 5, Tavistock Street, Covent Garden, London, Wednesday, August 11, 10 a.m. Bar. 29·9. Temp. 67°. Weather, Fine.

The Director of the John Innes Institute.

The announcement that Sir Daniel Hall has been offered and has accepted the post of Director of the John Innes Horticultural Institute will be received with universal satisfaction by horticulturists. The satisfaction may, it is true, be tempered with regret that the Ministry of Agriculture will no longer enjoy the distinction which Sir Daniel's office of Agricultural Advisor conferred upon it. We understand, however, that although his new post must, perforce, occupy all his energies, Sir Daniel will continue, for the present, to advise the Ministry on scientific subjects. We know of no one so well qualified as is Sir Daniel Hall for the post of Director of the John Innes Institute. Of him it may be said with truth that "he touches nothing which he does not adorn." As Principal of Wye Agricultural College he won the regard and admiration not only of his students but of the Kent growers. Rothamsted under his guidance achieved a yet wider reputation than it had enjoyed before his advent. We may therefore look forward with confidence to the John Innes Institute becoming under his direction the foremost horticultural station in the world. He will doubtless broaden the present basis of the research activities. Horticulturists keep in their memories a warm regard for the late Director and would not wish that the lines of investigation which he laid down should be abandoned; but they will hope—and we know not vainly—that the many other branches of horticulture will be made also to flourish at Merton. The advance of knowledge of the physiology of plants has been rapid in recent years, and it is high time that that advance should be put to practical application. For that to be done at the Institute, the chief officer there must be at once a man of science and a gardener. It is therefore a fact of happy omen that Sir Daniel Hall combines the highest scientific attainments with a sound and practical knowledge of gardening. He is, as everyone knows, our great authority on Tulips, and he not only knows them but grows them extraordinarily well. He, if anyone, will be able to make the not too congenial soil of Merton blossom as the Rose; for all his life he has been engaged in studying soils and in circumventing their obduracy. The science of manuring flower and vegetable crops is as yet in its infancy. It is indeed in the phase in which medicine was a hundred years ago when a general remedy was prescribed for all ailments. No one who knows plants and who has been baffled by their idiosyncracies doubts but that the soil requirements of each kind of plant are in some respect or another different from those of every other kind. And therefore, although we do not look forward to the day when manures will be as numerous as the plants they fertilize, we do contemplate a great advance in practice along these lines. Then again, and in spite of the constant and successful labours bestowed by British seedsmen in the selection of varieties and the introduction of new sorts, it is certain that yet further progress is to be made in these directions, both by breeding, rogueing, and the isolation of pure lines. Yet another subject which we hope and believe will occupy the close and constant attention of the new Director will be that of the education of the gardener. Imagination and innovation are wanted here. Horticulture is undergoing rapid transition. The new race of gardeners contains, as we believe—though we could wish that our belief were groundless—fewer men of outstanding skill and knowledge than were to be found among the older generations. New conditions demand new methods and we shall look to the Institute to devise and establish methods of training gardeners which will help to maintain the pre-eminence of our land as the country of beautiful gardens. The study of plant diseases must, of course, have a place at the John Innes Institute, but it should not, and we are confident will not, override the study of the health of plants. Plant hygiene in the present primitive state of plant pathology is regarded only too often as consisting in the devising of preventive methods calculated to check the spread of disease. That way, not progress but reaction lies, and what we need is a race of plant pathologists who can help us to grow plants so full of life that the attack of fungi and other pests fails before the natural defence of their healthiness. Nor is such a hope chimerical, and it only requires for its fulfilment a profounder knowledge of the physiology of plants and an application of that knowledge to the practice of horticulture. We are confident that with Sir Daniel as its Director the John Innes Institute will become the centre of horticultural research, not only in this country, but in the world at large and that in the course of years it will acquire a fame in horticulture not less than that achieved in agriculture by Rothamsted under Sir Daniel Hall's guidance.

The Prince of Wales and the British Association.—Botanists and gardeners who listened to the inaugural address delivered by His Royal Highness the Prince of Wales at the meeting of the British Association at Oxford, had reason to be pleased with the numerous instances which the Prince chose from horticulture to illustrate the advances which are being made in science. His Royal Highness spoke in terms of commendation of the work in fruit-tree stocks which is being carried on at East Malling, and referred also to the important progress in the study of Wart Disease in Potatos. Moreover, in a vigorous passage the Prince warned the world not to think that commonplace things are trivial. The greatest advances in human well-being are founded on the successful exploration of commonplace things.

Original Victoria Medallists.—Of the sixty horticulturists who received the Victoria Medal of Honour in Horticulture when the award was instituted in 1897, eight only remain:—Lord Rothschild, Miss Gertrude Jekyll, Miss Ellen Willmott, Sir Daniel Morris, Sir Frederick Moore, Mr. James Hudson, Mr. James O'Brien and Mr. William Crump. All these continue to assist in the advancement of horticulture. At a recent meeting of the Linnean Society, Lord Rothschild took a prominent part in one of the discussions; Sir Daniel Morris, formerly Treasurer of the Royal Horticultural Society and Assistant Director of the Royal Gardens, Kew, travelled from his home at Bournemouth to visit the exhibition at Vincent Square on Tuesday last; a few days ago we saw Sir Frederick Moore in his pleasant garden at Rathfarnham, happily engaged in the cultivation of many rare and interesting plants; Mr. James Hudson was also present at Westminster on Tuesday; Miss Gertrude Jekyll continues to garden finely and write interestingly on garden subjects; Miss Willmott is rarely absent from the meetings of the Royal Horticultural Society and the National Rose Society; Mr. James O'Brien, although seldom far from home, enjoys good health, is still keenly interested in Orchids and contributes to our columns, notwithstanding the weight of more than eighty years; while Mr. William Crump appeared to have discovered the source of perpetual youth when we met him recently at Wolverhampton Floral Fête.

Awards to Flowers at Wisley.—The following awards have been made to the undermentioned flowers by the Council of the Royal Horticultural Society after trial at Wisley. Award of Merit to Delphinium Orion, sent by Messrs. Bakers, Messrs. Thompson and Morgan, Mr. W. Egmond and Mr. Ruys; to Linum grandiflorum Blue, sent by Messrs. Watkins and Simpson; to L. grandiflorum rubrum, sent by Messrs. Herb, and to L. grandiflorum, sent by Messrs. Kelway and Son—the two last were considered to be alike; to Nemophila insignis, sent by Messrs. W. H. Simpson, Messrs. J. Kelway and Son, and Messrs. Dobbie and Co.; to N. maculata, from Messrs. Watkins and Simpson; and to N. maculata grandiflora, from Messrs. Dobbie and Co.—the two last were considered to be alike.

Mr. William Cuthbertson, V.M.H.—The many friends of Mr. William Cuthbertson, the head of Messrs. Dobbie and Co., will be glad to learn that he and Mrs. Cuthbertson have returned safely and in excellent health from their ten-months' tour round the world. Mr. Cuthbertson was present at the exhibition of the Scottish National Sweet Pea, Rose and Carnation Society, in Glasgow, on August 4, and he also attended the meeting of the Royal Horticultural Society on Tuesday, August 10, where he received many congratulations upon his safe return from his very interesting trip.

Southport Flower Show.—The third annual show promoted by the Southport Corporation to be held in Victoria Park, Southport, on August 25, 26 and 27, promises to be the largest of the series. Entries are numerous in all sections and classes, and there will be fine trade displays. In connection with this great show the National Rose Society will hold its Jubilee exhibition. A marquee covering about an acre-and-a-half of ground is being prepared to accommodate the exhibits.

Afforestation and Birds.—Mr. T. Wilson Ogilvie has lately written to *The Times* from St. Bees, Cumberland, commenting on the practice, which is growing in the Lake District, of re-planting areas of native wood with Larch and other foreign Conifers, which tends to drive away the birds through lack of suitable food. A distinct diminution of bird-life through this cause has been noted by naturalists at Thirlmere and other re-planted areas. The Forestry Commissioners have been appealed to to plant more berry-bearing trees, but no definite promise to do so has been forthcoming. It has to be borne in mind that afforestation has usually for its main object the formation of good timber, but even with this proviso, there are many trees besides the Larch which could be planted with advantage, and which would at the same time yield food for the bird population of the forests. The Oak, with its acorns, Beech, with its nuts and mast, the Hazel, favoured by the nuthatch and the Arbutus, which attracts the bullfinch, might all be judiciously introduced in a planting scheme, as well as such berry-bearing trees as the Mountain Ash, Yew, Bird Cherry, Whitebeam, and Blackthorn.

British Delegates to the International Conference at New York.—Dr. A. W. Hill, Director of the Royal Gardens, Kew; Mr. F. J. Chittenden, V.M.H., Director of the Royal Horticultural Society's Gardens, Wisley; Dr. A. B. Rendle, F.R.S., V.M.H., Keeper of the Department of Botany, British Museum; and Mr. J. Ramsbottom, of the same Department, and Botanical Secretary of the Linnean Society, have gone to the United States to take part in the International Conference on Flower and Fruit Sterility, which opened at New York (see p. 94) on August 12.

Fruit Crops in the Netherlands.—The following official report on the conditions of fruit in Holland on July 23 has been received by the Ministry of Agriculture. On the whole it is a bad Apple year, fungous and insect pests have done much damage oyer a wide area. Pears are bearing well generally, but the fruits are small for this time of year. Plums promise an average crop. The late dessert Plums are bearing better than the earlier varieties. Grapes promise an abundant crop. Peaches under glass are a good crop, but outdoors are only fair. The conditions of the different crops can be indicated by figures. In adjusting those figures the importance of a crop and its acreage in the different parts of the country are taken into consideration. The following scale has been used as a basis: 100, excellent; 90, very good; 70, good; 60, fair; 50, moderate; 40, rather poor; 30, poor; and 10, a failure. An average crop is indicated by the figure 67. Apples, 36; Pears, 72; Plums, 50; Grapes, 84; Peaches (glass), 70; Peaches (outdoor), 60, and Raspberries, 44.

National Dahlia Society's Exhibition.—On the occasion of the National Dahlia Society's display to be held at the Royal Horticultural Hall on Wednesday, September 8, the Rt. Hon. Viscount Ullswater will open the exhibition at one o'clock.

Summer Rose Show at Ghent.—The Belgian National Society "Les Amis de la Rose," which, as recorded in these pages, was founded only a few months ago, held its first exhibition at Ghent on July 18 and 19, in the spacious rooms of the Bourse du Commerce, Place d'Armes. The exhibition was officially inaugurated by Comte de Kerchove de Denterghem, Governor of East Flanders, accompanies. by the Mayor of the city and other authorities. As a first function of its kind, this well-organised and interesting exhibition was a great success, owing largely to the participation of the President, Monsieur Geo. van Oost, Consul of Persia, and to the special activity of the secretary, Mons. Jean Reuter, Director of the Royal Nurseries (M.M. L. van Houtte). The show was divided into three sections, i.e., professional, amateur and floral art. The most important Belgian Rose growers competed in the first section. We may specially mention M. Lens, of Wavre-Notre-Dame, near Malines; M. Braeckman, M. Kerkvoorde, M. Dervaes, M. van Heden, of Wetteren; M. L. Van Houtte, of la Pinte, near Ghent; and M. Temmerman, of Tehellebell. Noticeable in the amateurs' section were numbers of Roses in leading varieties, artistically displayed in vases, baskets, pergolas, etc. The different exhibits were displayed in one large salon, the walls of which were decorated with the superb scenery of the Ghent Royal Theatre. The group of the Associations of Florists, from Ghent and Brussels, attracted the interest and the admiration of all the visitors.

SIR DANIEL HALL, K.C.B., F.R.S.

Appointed Director of the John Innes Horticultural Institute (see p. 121).

Presentation to Mr. Alfred Watkins.—The directors and employees of Messrs. Watkins and Simpson met together a few days ago at the firm's offices, Drury Lane, for the purpose of honouring their veteran chief and founder of the firm, Mr. Alfred Watkins. Mr. Watkins was accompanied by Mrs. Watkins and supported by his two co-directors, Mr. J. M. Bridgeford and Mr. A. H. Howard. On behalf of the staff, Mr. Bridgeford made happy reference to their chief's kindliness and to the high esteem in which he is held by every member of the staff, and concluded by presenting Mr. Watkins with a portrait of himself, in oils, which is a particularly life-like, three-quarter length representation. Mr. Bridgeford then presented Mr. Watkins with a beautifully illuminated album, containing the signatures of all the staff, and after reading the address contained therein, invited all present to drink to the health of their beloved chief. Mr. Watkins was deeply affected by the presentation and by the many kindly personal references to himself. He expressed his deep gratitude to all who had worked so loyally with him during the long period of fifty years since he commenced business, and he said he was very proud of the fact that one member of the staff had been with him forty-five years, two for over forty years and several for more than thirty years, while the average period of service of the whole staff was not less than fifteen years. He then thanked the staff for the beautiful presents made to him that evening, and hoped that all would continue to work amicably together so as to maintain and advance the business he had founded. A pleasing incident in the proceedings was the presentation of a beautiful bouquet of Carnations to Mrs. Watkins by Mrs. Ridley, the oldest employee in the firm, with a record of forty-five years of service. To mark the auspicious occasion, Mr. Watkins announced that he and his co-directors felt they should acknowledge the loyalty and industry of the staff in some way and they had decided to present each member with a sum of money in proportion to the length of their service, and he at once proceeded to hand a cheque to each member present. Needless to say, this kindly appreciation was received with very great pleasure. Later in the evening, Mr. Bridgeford announced that it was Mr. Watkins' wish that his portrait should be hung in the Company's Board Room at Drury Lane.

A Tragic Coincidence.—We recorded in our issue of July 24, p. 78, the sudden death of M. Beaucantin, a well-known French landsscape architect, in the train while on his way from Paris to Brest. We now learn that after attending his funeral at Rouen, M. Beaucantin's widow was travelling back to Paris, accompanied by a garden designer who had been with her husband when he met with his death, when an accident occurred to the train, the carriage in which they were travelling parted in two, and Mme. Beaucantin was killed, the friend being also seriously injured. Such a coincidence as the deaths, both in a train, of a husband and wife within a few days of each must be almost unique.

Calcot Park, Reading.—Sir Felix Pole, General Manager of the Great Western Railway, has taken over Calcot Park, Reading. Sir Felix, who is an ardent amateur gardener, will here find ample scope for the persuit of his hobby, and we may look forward to the restoration of many of the former features of these fine old grounds, and probably to the introduction of new features in which Sir Felix takes special interest, especially in alpine gardening. During his residence at Elcott, Caversham, the extensive garden has been vastly improved, the gardener assisting the employer rather than being saddled with the labour of structural alterations as well as the routine work of upkeep. Choice flowering shrubs and alpine plants have enhanced the beauty of these gardens, and some excellent Conifers have developed into fine specimens.

National Rose Society's Dinner.—The Council of the National Rose Society, in response to the widely expressed wish of members, has decided to hold a dinner at the Savoy Hotel, Strand, on Friday, September 10 (the first day of the Society's autumn show), at 6 p.m. for 6.30 p.m. Members desiring tickets for themselves and friends (10/6 each, exclusive of wines) should make application to the Hon. Sec.. Mr. Courtney Page, 28, Victoria Street, S.W.1, not later than August 27.

Devastating Fire on a Sugar-cane Plantation.—One of the most destructive Sugar-cane fires in the history of Natal has recently occurred on the Illovo River. The fire spread along the coast towards Durban for a distance of five miles and destroyed over five-hundred acres of Sugar-cane plantations. Unfortunately, a number of natives lost their lives in the fire, but three Europeans, who were also trapped, were more fortunate; two escaped almost miraculously by lying down and allowing the flames to pass over them, while the third succeeded in getting out of the path of the fire.

Government Grant for Forestry.—The Forestry Commission has just issued the following announcement:—"Local authorities and other owners of woodlands can obtain from the Forestry Commissioners grants for normal afforestation schemes, whether limited to one season or extending over a period of years. These grants will no doubt induce greater activity in systematic planting by municipalities and others, and also provide increased employment, especially during the winter months. Up to £2 per acre may be paid for planting Conifers, and up to £4 an acre for approved hardwoods. With a view to the conversion of worthless scrub areas into productive forest, additional grants are available for clearing such areas. No scheme for planting during the next season will be eligible for grant unless the application is submitted before January 1, 1927. Full particulars and forms of application may be obtained from the Assistant Forestry Commissioner, 1, Whitehall, S.W., or from the Assistant Forestry Commissioner, 25, Drumsheugh Gardens, Edinburgh.

Scottish Plant Breeding Society.—The first annual meeting of the Scottish Society for Research in plant Breeding was held in the Society's Station, East Craigs, Corstorphine, at the beginning of August, when Mr. David Bell, Leith, vice-chairman, presided in the unavoidable absence of Mr. James Elder, Drem. The report stated, among other things, that the object of the society was to promote the discovery and collection of such new and improved races of leading crop plants as were best suited to Scottish conditions, and that while the work was directed chiefly towards practical ends, a certain amount of attention had also to be given to problems not of immediate practical importance. The methods employed at the station are in the main (1) collection and classification of suitable living material; (2) isolation of pedigree strains on pure lines; (3) hybridisation of pedigree strains, varieties and species; (4) comparative trial of varieties, pedigree strains, etc. The plants on which experiments are being carried out are chiefly Potatos, herbage plants and Swedes. In moving the adoption of the report, Mr. Bell commented on the steadily progressive work of the past year and referred to a letter received from Mr. Elder, in which the need for a substantial addition to the membership was emphasised. It was also pointed out that the directors would require to consider at an early date the methods by which new and improved varieties of plants should be put on the market for distribution. The report was adopted on the motion of Sir Baird Wilson, Bart., of Carbeth. The accounts for the year ending March 31 last year were submitted by Mr. J. H. Milne Holme, of Irving House, Canoby, and showed that the financial position was satisfactory under the circumstances. The following gentlemen were elected ordinary directors: Mr. D. L. Bower, Dunbar; Professor Montagu Drummond, Botany Department, Glasgow University; Mr. John Gibb, Bishopton; Mr. J. Milne Holme; Mr. William Ingles, Granton House, Edinburgh, and Principal W. Paterson, West of Scotland Agricultural College, Glasgow. At a meeting of the directors which followed the annual meeting the following members were co-opted directors for the ensuing year: Mr. James H. Elder, Mr. Thomas Hogg, Glasgow, and Captain A. R. McDougal, Lander.

Open Spaces in Oxford.—There appears to be strong opposition on the part of many of the townsfolk of Oxford to the City Council's proposal to build on twenty acres of Headington Park; the expressed opinion being that it would be "almost as ill judged and wrong as building on Kensington Gardens or Hyde Park." In addition to the Headington Park project it seems also that, even though liable to floods, Port Meadow is similarly under consideration, but, it is reported, the freemen will not surrender their grazing rights except on condition that no building takes place there.

Progress in British Forestry.—The report of the Forestry Commissioners for the year ended September 30, 1925, shows that considerable progress has been made in the scheme for the acquisition and development of forest areas in Great Britain. Altogether some 78,480 acres of land were acquired. The area actually planted was 14,928 acres, and of this 14,353 acres were planted with Conifers, and 575 with broad-leaved trees. These plantings required 32,403,000 trees, of which almost one half were Scots and Corsican Pines, approximately one-quarter were Spruces (Norway and Sitka), while the remainder were Douglas Fir and European and Japanese Larches. Of the 78,480 acres acquired during the year under review 10,513 were of land not previously under trees, the remainder being the site of felled woodland. This year's expenditure on forestry was £271,717, of which £52,466 was spent in the nurseries.

Appointments for the Ensuing Week.—TUESDAY AUGUST 17: Winchester Gardeners' Association's Show. WEDNESDAY, AUGUST 18: Shropshire Horticultural Society's Show (two days); Banffshire Horticultural Society's Show; Scottish National Sweet Pea, Rose and Carnation Society's Show at Elgin (two days); Reading and District Horticultural Society's Show; Elgin Flower Show (two days); Perth Flower Show (two days); Rothesay Flower Show; Bangor Horticultural Society's show (two days); THURSDAY, AUGUST 19: Aberdeen Royal Horticultural Society's Show (three days); Dingwall Flower Show; Kilcreggan, Cove and Roseneath Flower Show; Peebles Flower Show. FRIDAY, AUGUST 20: Montrose Horticultural Society's Show (two days); Forfar Flower Show (two days); Carnoustie Flower Show (two days); Blairgowrie Flower show (two days). SATURDAY, AUGUST 21: Burnley Horticultural Society's Show; L.M.S. Federation of Horticultural Societies Show (N.E. Division), Southport; Colyton Flower Show; Witton and District Allotments Show; Charfield Fête and Flower Show; Alyth Flower Show; Forth District Flower Show; Gateside (Beith) Flower Show; Dollar Flower Show; Cupar-Fife Flower Show; Crosswood Freehold Allotment Association's Show.

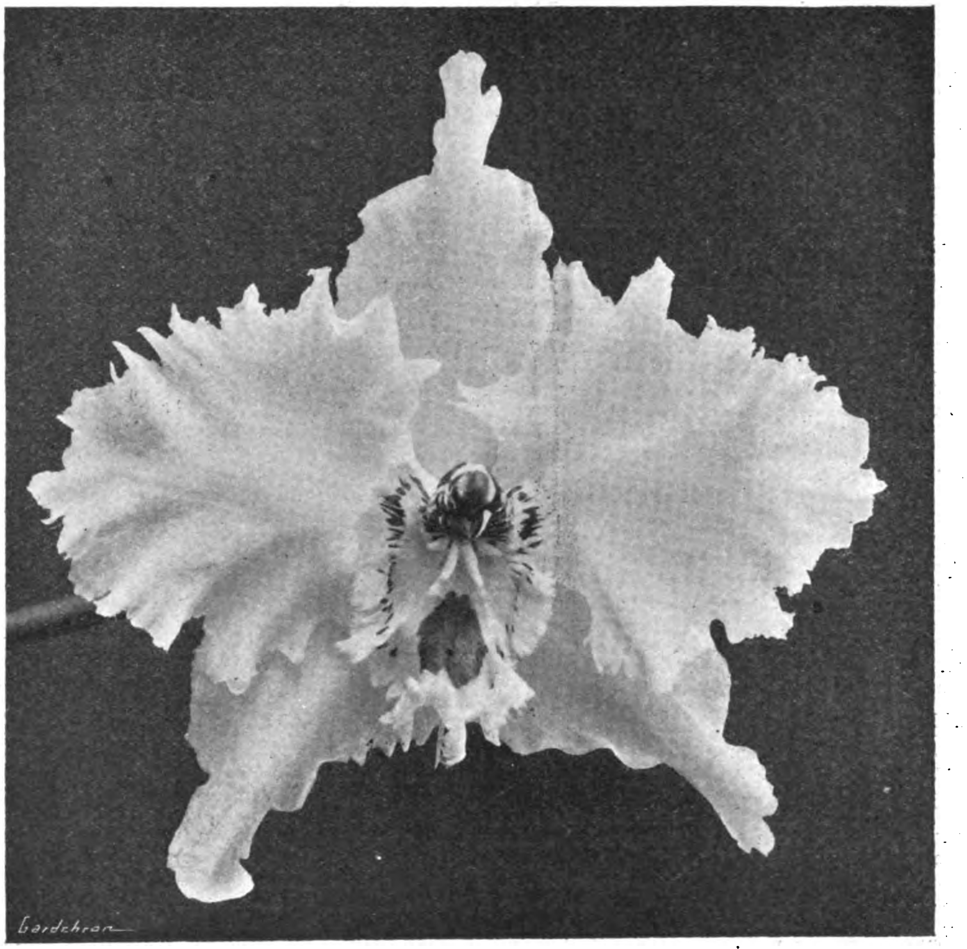

FIG. 59.—ODONTOGLOSSUM CRISPUM VAR. MRS. STANLEY BALDWIN.

(see p. 128).

"Gardeners' Chronicle" Seventy-five Years Ago.—*Dahlias.*—Every grower of this favourite flower will have noticed that some kinds possess a great advantage over others, both by expanding their blooms earlier, and also by throwing them out on extended footstalks from the foliage, so that they may be said to hang pendulous in the air. These advantages are possessed in a remarkable degree by the Dahlia called Cleopatra; and I should be much obliged by your carefully naming other kinds that possess them in an equal degree. *Cartmel.* [The following throw their blooms well up above the foliage and are of good habit. There are but a few kinds so tall as Cleopatra grown at the present day: Black Prince, crimson; Box, scarlet; Charles Turner, crimson; Duke of Cambridge, lilac; Earl of Clarendon, orange; Essex Triumph, maroon; Fearless, lilac; John Edwards, scarlet; Leda, buff; Model, brown; Mr. Palmer, salmon; Mr. Seldon, lilac; Mrs. C. Bacon, blush; Mrs. Seldon, yellow; Negro, crimson; Nepaulese Prince, crimson; Princess Radziwille, white and purple; Roundhead, buff; Royal Chancellor, claret; Seraph, orange; Sir F. Bathurst, crimson; Sulphurea pallida, sulphur; Sir R. Peel, scarlet; Thames Bank Hero, crimson.] *Gard. Chron., August* 16, 1851.

Publications Received.—*Pay the Postman Trading*, by C. S. Herbert; Claude Stacey, Ltd., 27, Chancery Lane, W.C.2; price 1/- net. *Hampton Court Gardens*, by Ernest Law; C. Bell and Son, Ltd., York House, Portugal Street, W.C.2; price 3/6. *Flora of Jamaica*, Vol. V., Dicotyledons, by Wm. Fawcett and A. B. Rendle; British Museum (Natural History), Cromwell Road, S.W.7.; price £1. 15s. 0d.

The Week's Work.

THE ORCHID HOUSES.

By J. Collier, Gardener to Sir Jeremiah Colman, Bart., Gatton Park, Reigate, Surrey.

Coelogyne.—Plants of Coelogyne cristata are making rapid growth, and well-established specimens need copious supplies of water at the roots whenever they show signs of becoming dry. They will also be benefited by an occasional watering with a weak solution of cow manure. Others that have been repotted recently should be watered rather sparingly until after the new roots have become well-established in the compost, and during their first season they should be afforded clear water only. These conditions should be maintained until the pseudo-bulbs have matured and the flower scapes are developing, when the supply of water should be gradually lessened. The surroundings of the plants should never be allowed to become dry, nor should the foliage be exposed to bright sunshine.

Miltonia.—M. Bleuana and many of its beautiful hybrids have started to grow afresh, and some of the plants may need re-potting. Miltonias are very restless plants, and frequently start into growth after a very short rest following the completion of their pseudo-bulbs. Where a number of these plants are grown they will reach a suitable stage for re-potting at various times. The most suitable period to deal with them is when the new growth is about two inches in height, and just previous to new roots starting from the base. Before re-potting the plants examine each growth for the presence of small, yellow thrips that secrete themselves low down in the axils of the leaves. An effectual method of destroying these insects is to dip the leaves and growths in a safe insecticide, and afterwards in clean tepid water. Young, vigorous plants should be shifted into larger receptacles with but little root disturbance. Larger specimens, which show signs of deterioration may be divided, and after cutting away all decayed roots and superfluous back bulbs, and removing all the old soil, each portion having two or three pseudo-bulbs behind the growing point may be given a separate pot or pan and will soon grow into a healthy specimen.

Compost for Miltonias.—Miltonias are rather shallow-rooting plants, therefore only a small amount of compost is needed as the numerous fibrous roots prefer to ramble just over or under the surface. The receptacle should be well drained, and a compost consisting of Osmunda-fibre, Polypodium fibre and Sphagnum moss employed as a rooting medium. The potting should be done moderately firmly and the base of the young growth kept just level with the rim of the pot or pan. Water should be afforded sparingly during the early stages of growth, merely sprinkling the surface each time it becomes dry, but when root-action again becomes active the supply should be gradually increased. Miltonias should be sprayed overhead on fine days. During the warm summer months these plants thrive best in the cool house, but when the nights become cooler it is best to grow them in an intermediate temperature.

THE KITCHEN GARDEN.

By F. Streeter, Gardener to Lord Leconfield, Petworth Park, Petworth, Sussex.

Winter Onions.—The present is a most suitable time for sowing seeds of this most important crop. If sown before this date a large percentage of the bulbs run prematurely to seed. Select a piece of ground that was well manured for the previous crop and give it a good dressing of wood ash and soot, adding lime should the soil be lacking in this most valuable ingredient. Draw sufficient drills about nine inches apart and very shallow; sow the seeds thinly, cover them with fine soil and rake over the whole bed. The following are excellent and well-tried varieties for this sowing:—Beckett's Autumn Triumph, White Leviathan, Giant Red and Lemon Rocca. A few rows of Silver Skin should be sown for salads, etc.

French Beans.—A sowing of French Beans should now be made in cold frames or pits on which lights may be placed in the event of early frosts. This will prove a very valuable and useful crop for prolonging the season.

Endive.—Continue to plant out sufficient Endive to maintain the supply of salads. Select sheltered borders where the plants may be blanched. Make other sowings according to requirements.

Lettuce.—A good sowing of Lettuce seeds to provide plants to withstand the winter should be made on a south border where the soil is in good condition. Plants from this sowing are often ready for use late in the autumn, if mild weather prevails.

Celery.—Continue to keep Celery well supplied with water at the roots and afford an occasional supply of liquid manure. Blanching should be commenced so soon as the plants reach the proper size; remove the small, short leaves on the outside, then tie a band of raffia loosely round the stem to keep in an upright position, and place a four-inch band of stiff brown paper around the base of the plant, adding a little fine soil to keep the whole in position. Dust the plants with soot weekly when the foliage is damp.

Hardy Cucumbers.—These Cucumbers have made very strong growth. Keep them well supplied with liquid manure, thin out the foliage and remove all yellow and decaying leaves. Do not allow the fruits to attain a large size before cutting them, otherwise the plants will quickly cease bearing. Many of these small Cucumbers may be used for pickling purposes.

FRUITS UNDER GLASS.

By T. Pateman, Gardener to Sir Charles Nall-Cain, Brocket Hall, Hertfordshire.

Pot Strawberries.—The cool, showery weather experienced during the end of July was all in favour of newly-layered runners, the whole of which have taken root without the use of artificial watering and made very desirable growth. Now that the young layers have rooted well into the new soil they may be detached from the old plants and allowed to remain in the small pots for several days afterwards, before placing them in their final receptacles, which, as a rule, are those six inches in diameter. Before potting them, however, if mildew and red spider have been troublesome, the plants should either be dipped in, or sprayed with, a mixture of soft soap and sulphur, but if only the mildew is present, spray the plants with a mildew wash. Success with Strawberries in pots will depend on the cultivation given them during the next two months; the great point to aim at is to give them a good start so early as possible, and allow no check. The potting compost should be good fibrous loam to which may be added some old, spent, Mushroom-bed manure, bone meal, lime rubble and wood ash. After potting stand the plants on boards or slates in a sunny position and, where possible, in single rows, so that each plant may have the maximum of light and air. I have found, after long experience, that it is very unwise to overcrowd the young plants at this stage. Watering is an important matter, and although Strawberries should never lack moisture at their roots, it is wise to afford water carefully after they are placed in their fruiting pots. Remove all runners as they appear, keep the receptacles free from weeds, and during hot, dry weather syringe the foliage with soft water late in the afternoon. When the pots are well-filled with roots supplies of weak liquid manure may be given throughout the month of September.

Orchard House Plums.—In many localities the outdoor Plum crop is a large one, therefore it will be found quite unnecessary to retard the crop growing under glass, nevertheless, it would not be wise to close the house entirely so as to hasten them unduly, or the fruits of thin-skinned varieties may crack. Keep all side-growths closely pinched, and if any of the leading growths are inclined to be coarse they may be pinched also. Discontinue feeding the trees when the fruit is nearly ripe, and supply less water to the border at this stage.

HARDY FRUIT GARDEN.

By W. Auton, Gardener to Viscount Elveden, Pyrford Court, Woking, Surrey.

Peaches and Nectarines.—Fruits of the earliest varieties on walls are almost ready for gathering and the trees should be examined daily. It is a good plan to remove the fruits slightly under-ripe and lay them on soft material in a dry, airy fruit room to finish, particularly if the weather is very hot. If fruits are left on the tree until dead ripe, losses are bound to occur through dropping. A sharp look-out must be kept for earwigs and steps taken to destroy them as they are very destructive and so soon as a fruit of Peach or Nectarine has been punctured a host of flies, ants and other insects carry on the destructive work. No better means of trapping can be adopted than that of placing pieces of Broad Bean stalk at intervals amongst the branches, from which the trapped insects should be shaken out daily into a pail containing paraffin. Wasps are also very destructive, and it is necessary to destroy their nests so soon as they are found. When they are attacking fruit the location of their nest is not difficult, as, by following their line of flight one is guided to the spot. The most effectual way of dealing with them is to place a piece of cotton wool, soaked in liquid cyanide of potassium, in the mouth of the hole. This destroys the perfect insects only and should be followed up the next morning by digging out the nests and destroying the grubs.

Pruning.—Immediately the fruits have been gathered the pruning of the trees should be done by removing those growths which have borne fruit, thus giving space to the shoots left at the base of these growths and assisting them to ripen thoroughly in preparation for next year's crop. Keep the trees clean by frequent syringings, and see that the border is kept sufficiently moist to carry on nutrition.

Raspberries.—The general crop will now have been cleared and no time should be lost in cutting out the old canes to facilitate the full development and ripening of the current year's growths. In cases where a few extra growths have been left to provide against possible losses during this operation, they should now be reduced to the requisite number, which should be tied into position. Generally speaking the Raspberry crop has not been very heavy this season and the young canes have made good growth, but where these show signs of weakness they may be assisted by the application of a quick-acting fertiliser.

THE FLOWER GARDEN.

By F. C. Puddle, Gardener to Lord Aberconway, Bodnant, Taly-Cafn, North Wales.

Bedding Plants.—The propagation of summer-bedding plants should now be commenced, and cuttings for next season's display should be inserted so soon as they are available. Early cuttings not only strike more readily, but being better established, the resultant plants are in a fitter condition to withstand the vagaries of our climate during winter. Care should, however, be taken not to unduly strip the plants of young growths, or the present display will be temporarily spoiled. Pots are preferable to boxes as receptacles for the rooting of Pelargonium cuttings, for the more airy conditions and better drainage ensured by placing the cuttings near the edge of the compost in a pot, renders them less liable to rot than when they are inserted in a large body of soil, which is unavoidable when boxes are used. Firm and partially ripened cuttings should be obtained whenever possible, but if, owing to damp weather, they are soft and sappy, it is a good practice to expose them to the air for a short time after preparation, to enable the sap to solidify on the cut surfaces, and so assist the healing of the wounds and the formation of cell walls. Care should, however, be taken to insert the cuttings in a sandy compost before actual flagging takes place. The pots containing the cuttings may be stood outdoors for a few weeks, but if a frame can be spared it is advisable to stand them in this so that the lights are available for protecting them during heavy rains.

Mesembryanthemums.—These and other bedding plants of succulent habit may be rooted in the same way as advised above.

Other Bedding Subjects.—Fuchsias, Heliotropes, Salvias, Verbenas, etc., require moister conditions for their well being, and should be rooted in a closed frame; if slight bottom-heat can be afforded rooting will be accelerated, but immediately roots are formed the young plants should be gradually inured to airy conditions so that the growths become firm before winter sets in.

Nymphaeas.—These beautiful aquatics should be examined periodically and have all old flowers and decaying foliage removed. The smartened appearance of the plants and the extended period of flowering which results from this attention will well repay the labour expended on the operation. In large ponds it may be necessary to use a punt to reach the plants, but in ponds of moderate size and depth, a pair of salmon waders worn by the operator will be found a more convenient and comfortable means of working amongst the plants.

PLANTS UNDER GLASS.

By John Coutts, Assistant Curator, Royal Botanic Gardens, Kew.

Hippeastrums.—During August most of the earliest-started bulbs will have completed their growth and should be removed from the growing house to cold frames, where water should be withheld from them as their foliage dies down. In the frames they should be kept fully exposed to the sun, keeping the lights over them at all times, but admitting air by raising the lights with tilts. Before placing them in the frames it is wise to clean them in case there should be an attack of mealy bug. Young, unflowered seedlings should be kept growing steadily, without drying them off, until they have attained flowering size. Young plants raised from seeds sown earlier in the season should now be ready for pricking off into pans. When large enough they should be placed singly in small pots. Where seed-sowing has been neglected and it is desired to raise a stock of young plants, seeds should be sown without delay so that the young plants may attain some size before winter.

Gloxinias.—As they pass out of flower, Gloxinias should be stood in cold frames, where water should be gradually withheld from the roots. When the foliage has died down and the tubers are well-dried, the latter may be turned out of the pots and stored in boxes of dry sand for the winter, taking care to store them in a warm, dry place. Gloxinias raised from seeds early in the year should be in their flowering pots, and from now onwards should give a good display.

Achimenes.—The earlier-started batches will now be passing out of flower and should be stood in a cold frame, treating them in the same way as Gloxinias. With these, as with other plants of this class, it is very important that water at the roots be withheld gradually. This point is often neglected after they have flowered, with the result that the bulbs or tubers are not properly developed and matured.

Veltheimia viridifolia.—This South African bulbous plant should be started into growth; where stocks do not exist, dry bulbs may be purchased now. Established plants in good condition at the roots need not be repotted every year. In the case of newly-potted plants water should be given very sparingly until a quantity of new roots and foliage has been made. This Veltheimia may be grown in a cool greenhouse, or even a cold frame, and although not showy, is deserving of more general cultivation, as it has a quiet charm which appeals to most plant lovers.

Exacum macranthum.—To obtain flowering plants for next year seeds should be sown at once, covering them with just a sprinkling of sand after watering the soil in the seed pan several hours previously. The pan should be covered with a piece of glass and kept shaded until germination takes place. When large enough to handle, prick out the seedlings into well-drained pans of light compost, consisting of one-half loam, and the other half brown peat and sand. When large enough, transfer the young plants to thumb pots, in which they will pass the winter. An average temperature of about 60° is most suitable, and careful watering is essential at all times. This beautiful plant is deserving of more general cultivation.

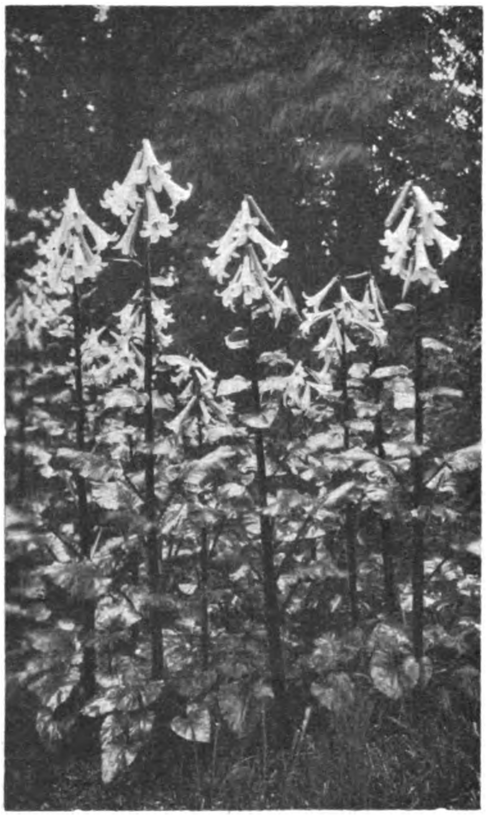

FIG. 60.—LILIUM GIGANTEUM AT BISHOPS HALL, ROMFORD.

(see p. 126.)

Caladiums.—As they finish their growth, Caladiums should be dried off and treated in the same way as advised for Gloxinias.

Humea elegans.—Seeds in quantity according to requirements, should be sown in a cool greenhouse about the middle of August, while excellent results may be obtained by sowing so late as October. This is contrary to the usual practice, but excellent plants are now in flower here from a November sowing. This resulted from the seeds of a previous sowing failing to germinate. When large enough to handle, the seedlings should be placed singly in small pots, afterwards shifting them into larger pots. Plants from the August sowing should be well-established in five-inch pots for the winter. This plant is generally regarded as being difficult, but failure with it is nearly always the result of growing it under close conditions and in an excess of warmth.

FOR NORTHERN GARDENERS.

By A. T. Harrison, Gardener to the Marquis of Ailsa, Culzean Castle, Maybole, Ayrshire.

Lachenalias.—These useful and comparatively hardy bulbs should be re-potted now, using as small pots as are consistent with requirements; four-inch pots will conveniently hold ten or twelve bulbs, and are very handy for various purposes at flowering time. Some growers prefer pans for Lachenalias, and splendid masses of flowers are produced in this way, while very effective hanging baskets may be made by planting the bulbs so that the growths protrude at various angles all round. The new varieties which have been obtained in both Lachenalias and Freesias are worthy of a trial, and some very beautiful colours and combinations of colour are now to be obtained. In all cases of newly-potted bulbs, water must be carefully supplied until new roots are formed, and have taken possession of the soil.

Flower Shows.—It should be the aim of every gardener to visit several of the leading flower shows in his district annually, and while there renewing old acquaintances and making new ones, to keep his eyes open to the improvements that are slowly but surely taking place amongst plants, flowers, fruits and vegetables. We sometimes like to think that in our own domain we have better plants, flowers, vegetables, or fruit than anyone else, and it is only when we go out, either as interested spectators, or better still, as competitors, that we find our true level, and an incentive to further efforts in the direction of that perfection we should all aim at. The trade exhibits at most of our larger shows have a lesson for us too, in the artistic arrangement and blending of colours, while the perfection of their specialities leave us in little doubt as to the improvements that are being effected in every direction in the horticultural world.

Raspberries and Loganberries.—So soon as the fruits have been gathered no time should be lost in removing the old fruiting stems, and tying up the young canes for next year's crop. A selection of the best canes should be made, cutting away all weakly ones, and leaving the rest so that no matter what system of training is employed, they may be exposed to sun and air, in order to ripen their wood thoroughly. Autumn-fruiting Raspberries will now be ripening their fruits, and must be well protected by netting, otherwise the birds will devour the crop as it approaches maturity. The protection of wall fruits must also be attended to in good time, early Plums and Pears especially forming a tempting feast to birds now that the smaller bush fruits are past. When the nets are put on early, and the birds are prevented from sampling the earlier varieties, they do not appear so destructive to later sorts, but all must be netted in good time.

Early and Second-Early Potatos.—The tubers are now fully matured and should be dug and stored forthwith. Nothing is gained by leaving these earlier sorts in the ground after the foliage has turned yellow, and any tubers required for seed purposes should be selected as the lifting proceeds, and stored in shallow boxes or trays, exposing them to the light so that the skins may be greened, after which the boxes may be stacked in a frost-proof shed for the winter leaving a space between each box and stack of boxes so that examination may take place from time to time.

BULB GARDEN.

LILIUM GIGANTEUM.

The accompanying illustration (Fig. 60) represents a fine group of the stately Lilium giganteum in Lord Lambourne's garden at Bishops Hall, Romford. As most of our readers are aware, this Lily is a great success in the Royal Horticultural Society's gardens at Wisley, and we have reproduced illustrations of successes with this noble species in several parts of the country.

LILIUM REGALE.

It is hardly necessary to sing the praises of this truly great acquisition, for it is already one of the most popular of all Lilies and one of the best of all garden plants. I have found it an admirable plant under quite ordinarily good conditions, and easily raised from seeds, flowering at eighteen months from the time of sowing.

Introduced from western China by Mr. E. H. Wilson, this glorious Lily created something of a furore when it first appeared in flower in this country. It is of vigorous growth, with stems from three to four feet in height, well-furnished with linear-lanceolate leaves. Each stem bears from two to four flowers. [We have had them with six and eight flowers, and one stem carried nineteen flowers this year.—Eds.].

The interior of the trumpet is flushed with golden-yellow, gradually shading to pure white at the margins, a suffusion of colour which reminds me of the glorious interior of some varieties of Tulipa Kauffmaniana. Externally, the blooms are flushed with brown, shading to pink at the extremities of the petals, and the whole effect is greatly enhanced by the exquisite texture of the whole flower.

The constitution of L. regale is good, the bulbs succeeding admirably in good loam and peat, and they do not object in the least to a limestone formation. As a pot plant, the regal Lily is excellent; it is stem-rooting and flowers in early summer.

HARDY CRINUMS.

The chief essentials to success in the culture of Crinums are a sheltered position—such as the foot of a warm south wall—a deep and well-drained bed of rich soil, deep planting and immunity from disturbance. A frequent cause of failure with these fine South African plants lies in planting the bulbs at an insufficient depth, thus exposing them to injury by frost; they should be placed at least six inches below the surface of the soil, and it is a good plan to surround each bulb with sand at planting time.

All the hardy Crinums revel in a rich loam and in abundance of moisture when growing; when doing well, they increase with comparative rapidity and form considerable masses, and the more congested the plants become the better they appear to flower. An occasional surface-dressing of loam and decayed manure will be appreciated, and copious waterings with liquid manure during the season of growth will be of considerable assistance to the plants.

Crinums are excellent subjects for a cool house, either planted out or in pots, and when so grown, the range of varieties is, of course, considerably increased, for many species that are not quite hardy will succeed with such protection. Propagation is effected by offsets and, in some instances, by seeds.

The species and varieties best adapted to open-air culture are as follow:—C. capense, with handsome, broad leaves and heads of rose-coloured flowers; it is very easily grown and perfectly hardy; C. capense album, with pure white flowers; C. Moorei, with rose-coloured flowers, and its white form, C. Moorei album; C. Powelli, one of the very best, and C. Powelli album, and C. yemense

Crinums commence to flower in July and continue until October, and sometimes even later; they are of great decorative value in the garden and last well in a cut state. *Ralph E. Arnold, Campden, Glos.*

FLOWER GARDEN.

HEMEROCALLIS.

The Hemerocallis is one of the most beautiful of garden plants, and one greatly improved by hybridists during recent years. It will succeed in almost any position, either in fully exposed or partially shaded borders, in any ordinary, fairly deep and rich soil, and may remain undisturbed for several years, requiring only an annual loosening of the soil and slight mulching.

Few plants surpass a few well-established clumps of Day Lilies in the border or by the water's edge, or bold masses in isolated positions on the lawn. The tall, straight flower-scapes rise above bright green foliage of graceful, arching habit, the leaves adding to the charm of the bright yellow and tawny orange-coloured flowers, which are developed from June to well into the autumn—often so late as September.

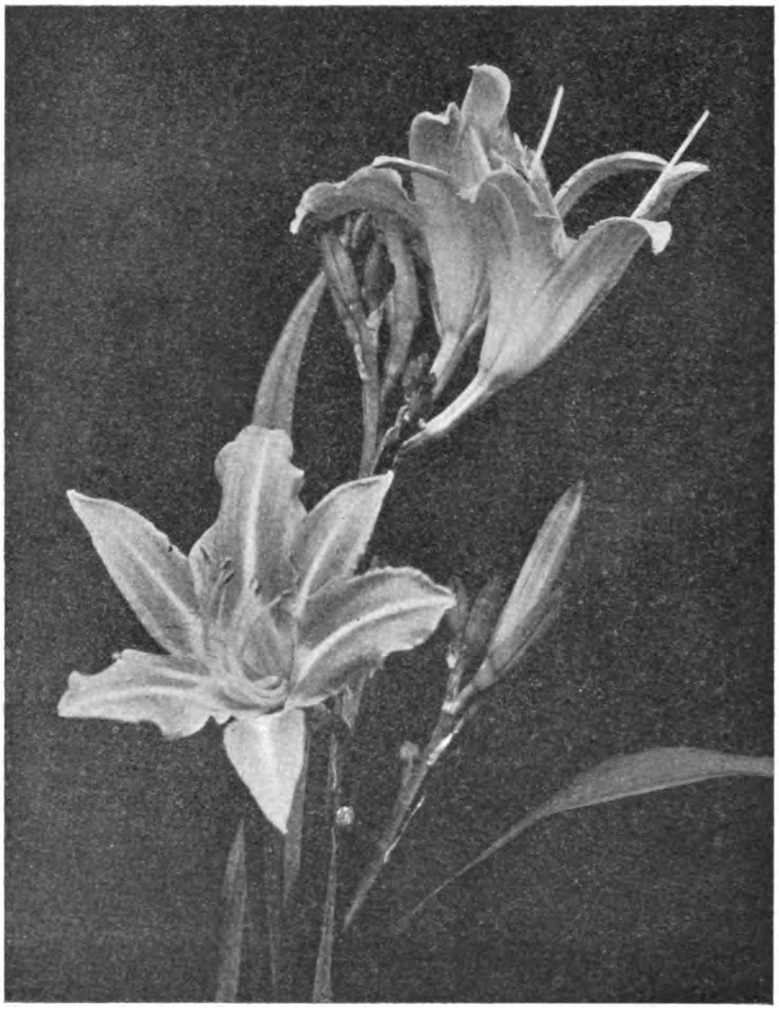

FIG. 61.—HEMEROCALLIS MARGARET PERRY.

Although the flowers are fugitive, lasting but a day, many of the new hybrids have so many as fifteen to twenty flowers and buds on a stem, thus ensuring a long succession of blooms. They are useful as cut flowers and should be cut when in bud, for every one of the most backward buds will open perfectly in water.

The following new hybrids are well-deserving of inclusion in all collections of hardy perennials, and may, with confidence, be recommended for general garden decoration:—Lady Fermoy Hesketh (Thunbergii × citrina), with medium-sized, sweetly-scented flowers of a rich apricot yellow, borne in abundance on stout, branching stems from June to September. The plant grows three-and-a-half feet to four feet tall. Margaret Perry (fulva × cypriana), (Fig. 61), received the R.H.S. Award of Merit on July 13. The bold symmetrical flowers are borne on branched stems, three-and-a-half feet tall; they are of an unusual chocolate-bronze and orange shade, with a distinct yellow line or midrib running the full length of each petal. This variety flowers from July to September.

Of a different type is Thelma Perry (Thunbergi × citrina). This Day Lily has erect foliage and tall, well-branched spikes, three-and-a-half feet tall, each bearing from fifteen to twenty flowers and buds. The blooms are of a rich, clear, canary-yellow and delightfully fragrant. This variety is also in flower from July to September. George Yeld (citrina × fulva), has bold, broad foliage, arching gracefully and large, symmetrical, well-expanded flowers, fully five-and-a-half inches to six inches across. The colour is pink-orange, the inner petals being mottled and lined with bronzy-scarlet. This variety grows three feet high and blooms from July to September. Mrs. Perry (Thunbergi × citrina) has bold, Amaryllis-like, well-expanded flowers, with short tubes. They are a delightful shade of rich old gold, borne on stout, well-branched scapes, fully four feet tall. The blooms are sweetly-scented. E. A. Bowles (Fig. 62), has large, Hippeastrum-like flowers of very large size, of a delightful rich orange colour, with the inner petals prettily crinkled. The height is three-and-a-half feet. Iris Perry Thunbergi × aurantiaca) has fragrant, tawny, fox-coloured flowers, shaded old gold. It is a a very effective and distinct variety. Gold Standard bears rich, canary-yellow petals slightly stained with bronze ; it is a remarkably floriferous variety, growing three feet tall. Gold Improved has long, tubular, Lily-like flowers of a rich orange colour and delightfully fragrant. The height is three-and-a-half feet This variety blooms from June to August. Yellow Hammer is a rich orange-yellow variety, with long, tubular flowers, and gracefully arching foliage. It grows two-and-a-half feet tall, and blooms from July to September. All these Hemerocallis may be increased easily by division, and should be transplanted from October to March. *W. L.*

THE HEMSLEY SIDALCEAS.

Sidalceas have made noteworthy progress in popularity of late, and whilst several varieties of distinction have cropped up in various quarters, the numerous hybrids which Mr. H. Hemsley, of Crawley, has raised deserve particular notice, for their usefulness is great, and their charms varied and fascinating.

It is obvious that several species have been crossed and intercrossed in the process of evolution of this new race, and whilst some plants have retained the stiffly-erect, spiked, habit of S. candida and S. Listeri, others have followed the looser, branching habit of S. malvaeflora. Some show the influence of both types and have made bushy plants of medium height, with erect, central spikes surrounded with numerous laterals. There are also several which have forsaken effort to attain height, and produced corymbose heads rather than spikes of bloom, some upon plants only about a foot in height.

It would be a simple matter, by means of division, to work up a stock of neat, compact plants which would as trimly and effectively fill a bed as do Pentstemon Newbury Gem, Antirrhinums or Godetias, and for a late summer and autumn display such a bed would be strikingly effective. Other individuals in a group of seedlings may well be selected for grouping in the herbaceous border, and quite a considerable proportion afford material in abundance for artistic cut flower decoration.

The colour range in these Sidalceas is uncommon ; the flat, dull puce shades have been successfully eliminated, and there are shades for which the hackneyed term "rose-pink" is altogether an injustice ; their tone is rich, full of life and radiant with the lustre of finest satin. There is terra-cotta and a brick-red that is relieved from hardness by its wonderful sheen, and there is the pink of mother o' pearl and the shining, sparkling red of the ruby.

The inevitable has happened in that a few varieties have been selected for naming, a legitimate course by which the special preferences of buyers may be catered for, but as the real fascination of the race lies in the quality and pleasing variety it shows, it is to be hoped that extraction of distinctive individuals will not be carried to an extent which reduces the charm of the strain as a whole.

Sidalceas grow with remarkable freedom, and have few whims. They revel in root moisture but endure a considerable amount of drought with impunity. They require less staking than many plants of similar height, and multiply freely by means of division in early spring. August and September sowings of seeds will produce flowering plants a year hence. *A. J. Macself.*

VENIDIUM CALENDULACEUM.

In a genus comprising about twenty species of South African plants, the subject of this note is the only one generally known to cultivation, and this is but rarely met with. As its name implies, the flower-heads of V. calendulaceum bear a marked resemblance to those of the Pot-Marigold ; the rays are clear bright yellow, the disc brown or almost black, the flowers producing a good effect when massed. The leaves are a lively green, glabrous above and extremely woolly beneath, and the whole plant reaches a height of from eight inches to one foot ; according to some authorities, the species is a variety of V. decurrens, but is now generally accepted as being of specific rank. Venidium is near to Arctotis.

Strictly perennial, this Venidium is usually treated as a half-hardy annual, and is susceptible in a marked degree to damp in the early stages of growth. Massed in the mixed border, it is a very telling plant and may be so employed with marked advantage. It flowers from July to October, and, like South African plants in general, dislikes a wet season.

ZAUSCHNERIA CALIFORNICA.

This delightfully bright plant is always very welcome in the early autumn, providing a patch of vivid colour in the flower border, the rock garden or on an old wall. I have never seen it more effective than when clothing the top of an old dry wall, with a Yew hedge as a background ; the sombre Yew intensified the colouring of the flowers and made them quite startling in their brilliance.

Variously known as the Californian Fuchsia and Humming Bird's Trumpet, its vermilion-red flowers are produced in loose spikes terminating the branches ; they are erect, spreading, with tiny leafy bracts. The calyx is coloured, funnel-shaped, globose at the base ; the segments spreading. The four petals are a little longer than the calyx lobes and two-cleft ; the leaves are crowded, linear, narrow, mostly entire and pubescent. The lower leaves are opposite, those of the branches alternate. The height of the plant is about one foot. Found in California and Mexico, this plant was introduced into England in 1847. The variety latifolia has rather smaller flowers of a duller red than the type and rather broader leaves ; this is the form figured in *Bot. Mag.*, 4493. A form known as splendens shows more freedom of flowering than does the typical plant.

When in congenial surroundings, Zauschneria californica spreads freely, and if allowed to remain undisturbed, is a most valuable garden ornament during the late summer and autumn. It is propagated by cuttings, and in cold districts, it is a good plan to maintain a stock in a frame during the winter months. *Ralph E. Arnold.*

ERIGERON QUAKERESS.

The lovely hybrid Erigeron called Quakeress has rapidly come into favour. Its soft lavender flowers are delightful both in the border or when used in a cut state. As a border plant, however, it gains immensely when planted in a mass, and one seldom meets with it grown in this way, usually only single plants being employed, In the garden of Mrs. A. Hope Henderson at Argaty, Doune, Perthshire, there are some magnificent masses in the borders, and, as cut flowers are much employed for the decoration of the house, E. Quakeress has proved very useful. There were, in particular, two very fine masses in two borders, and it was most pleasing to see the myriads of elegant lavender blooms on these in late July. E. Quakeress is now well-known, but those who have not seen it in a mass as grown at Argaty, have never been able to realise its true worth.

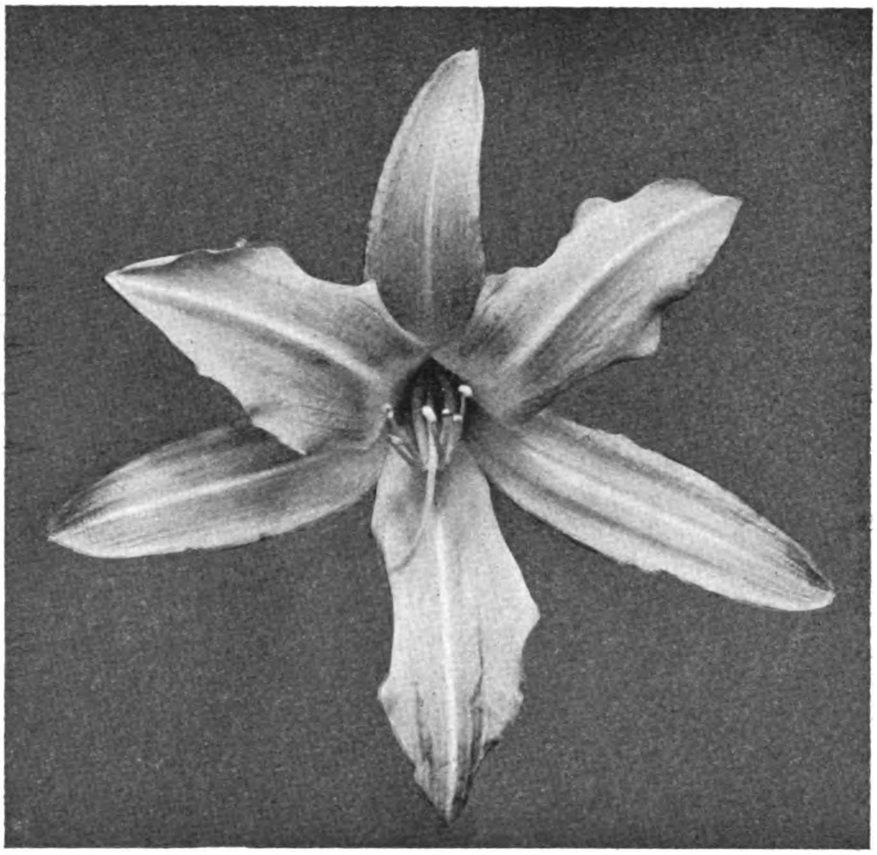

FIG. 62.—HEMEROCALLIS E. A. BOWLES.

COREOPSIS VERTICILLATA.

Of the Tickseeds, none is more graceful than Coreopsis verticillata, which is a most desirable border plant that has been in cultivation for many years, but which is never too plentiful in gardens. It was with great pleasure, therefore, that I saw a large mass of it the other day in the Glasgow Corporation nursery at Ballahouston Park, so well-kept by Mr. Williamson, the nursery being under the care of Mr. William Robertson. It was a great pleasure to see so many plants of this most graceful Coreopsis in the best of condition and bearing hundreds of blooms above the slender stems with their narrow whorled leaves, so pretty in themselves. The plants were about the height of two feet, the usual stature in well-cultivated soil, such as that at Ballahouston The flowers are of fair size and are bright yellow. I have long known this as a good border plant, but had never before had the pleasure of seeing so many plants in bloom together. It was introduced to Great Britian in 1780. It loves dry soil and full sun and is propagated by seeds or division. *S. Arnott.*

ALPINE GARDEN.

PAROCHETUS COMMUNIS.

This plant requires abundant moisture during the spring and summer months, and only these conditions will conduce to luxuriant growth and free-flowering. A half-shaded position in the rock-garden, in loam and leaf-soil, with water within easy reach of its roots, will suit this beautiful plant to perfection, and in such a position it will produce myriads of its Pea-shaped flowers of the clearest blue. The flowers are produced over a very long period and with the shelter of a cold frame, even in mid-winter. The Elm-like leaves are adorned with small brown markings on each lobe, and at sunset these leaves close up for the night.

Of recumbent habit and rooting at every joint, under congenial conditions, the plant will soon cover considerable space and become an exceedingly beautiful object. Propagation is easily effected by cuttings. It is not quite hardy in all districts, therefore, a stock of plants should be kept in a cold frame during the winter months. *Ralph E. Arnold.*

CODONOPSIS OVATA.

It is recognised by most folks who have grown the various plants known in nurseries and gardens as Codonopsis ovata that there is considerable confusion in the nomenclature of the genus. An excellent authority has laid it down that the plant we have known for years as C. ovata is really C. clematidea, but C. ovata is used here, as it is the name by which it may generally be obtained. It ought certainly to be preferred to the true C. ovata, which is variable and not so effective in appearance, due partly to less pronounced colouring and also because the mouth of the flower is less open, thus concealing the inner markings, which constitute a feature of the best Codonopsis. If purchased as C. ovata, I anticipate that the plant procured will turn out to be C. clematidea.

This has wonderfully attractive, drooping bells of clear, light blue, prettily netted and marked in the interior. It has also smooth, rather than downy foliage. As commonly seen in gardens, this Codonopsis does not show its real beauty, but, if planted on a high bank or lofty piece of rock-work above the level of the eye, it is possible to enjoy it without having to turn up the flowers. If planted there, especially with some lime in the soil, it will be highly ornamental. It should not be placed in heavy soil or a wet position, where it would be liable to suffer in winter, but be given a light, well-drained compost.

C. ovata may be increased by careful division of large plants in spring or autumn, and may also be raised from seeds sown under glass in spring. It is quite hardy in ordinary seasons, although I have lost plants in specially trying winters. By-the-way, the peculiar, almost Coffee-like odour of the flowers is rarely mentioned by writers. It is quite perceptible however, but is not at all offensive, and can only be detected at close quarters.

POTENTILLA RUPESTRIS.

It is singular how so many good border or rock garden plants are comparatively neglected and are very little in evidence in the garden. This can only be accounted for by the fact that the number of flowers of high merit is so great that it is inevitable that many must necessarily be omitted from any garden. Then, unfortunately, unless a plant is brought prominently before garden lovers it is liable to be overlooked, especially in the case of one which has not unusual brilliance to recommend it. Potentilla rupestris is one of these flowers, and, although highly praised by some writers, it is only now and again met with of sufficient size to ensure admiration. It has no brilliancy of colour and no special rarity to attract anyone, but it has, all the same, a great charm about it when of some dimensions, and not until then do we realize its grace and beauty. A small plant a year or two old is insufficient to show its worth, but when it has attained the dimensions of a foot or more in diameter we can then appreciate its elegance and attractiveness.

The late Mr. Reginald Farrer waxed eloquent in its praise, and one would fain quote some of his enthusiastic words in writing of P. rupestris, albeit it had no claim to be one of the tiny gems which most attracted that departed flower-lover. Its height is from one foot to two feet or a little more. From the rootstock there rise a number of slender, graceful stems, bearing pretty leaves and numerous flowers of white from May to July. It is an excellent border plant, but in a border requires to be tied up or it will not show its beauty there. On the large rock garden, however, it will fall over a large stone or rock and there reveal its elegance and show to the fullest the pleasing character of its white flowers. It is widespread in nature, and seems to accommodate itself to widely diverse conditions, becoming dwarfer in hot and dry places but more luxuriant in richer or moister soil. In the garden P. rupestris appears to have no special wants, but flowers happily in border or rock garden. It is easily propagated by division, or plants may be raised from seeds sown either in the open or under glass. *S. Arnott.*

RAMONDIAS.

Although this genus of Gesneriads is a small one, it gives us in R. pyrenaica a most charming plant for the rock garden, with rosettes of crinkled, leathery leaves, and brilliant lilac-blue flowers. There is a white variety known as alba, and a rose-coloured variety called rosea, but neither has the attractiveness of the type.

It likes a shady situation where the surroundings are cool and moist, and no better spot can be chosen for it than the vertical fissures or crevices between rocks, where its roots may ramify to a considerable depth, and the crown of the plant, being on its side, does not collect water. A peaty soil with a little sharp sand suits it well, and in planting care should be taken that the compost is well-rammed so that there are no vacant places between the plants and the rock.

Flowering as Ramondias do in June and July, the seeds are now ripe, and if collected and sown immediately they germinate freely. The seeds are extremely small and should not be covered with soil, but scattered on the surface of well-prepared pots and pans and placed in a shady, cold frame. When the seedlings are large enough to handle they should be pricked off, first into boxes or pans and then into small pots and kept growing in cold frames until they are sufficiently large to take their place in the rock garden. This is a rather slow method of propagation, and flowering plants can hardly be expected until the second year.

Propagation may also be effected by means of leaf-cuttings. If the leaves are cut off close to the plant, inserted in moist, sandy soil, and kept in a close hand-light they form roots and make good plants in a year. A number of young growths are often found around the base of an old plant, and they may be carefully removed and grown on in a frame. *A. P. C.*

INDOOR PLANTS.

CELOSIA PLUMOSA.

The plumose Celosia is a useful feature of the greenhouse just now and attracts attention because of its unusual appearance, the feathery plumes being a fine contrast to other flowering subjects. Two colours predominate, yellow and crimson, while there are slightly varying shades of these tones, and also a brighter hue than crimson.

Celosias are adapted for summer bedding in localities that are not too cold and are used in public parks in this way. Their usage in private gardens would appear to be much rarer, this fact being due, no doubt, to the more careful attention necessary in the growing of the plants, and further, because Celosias cannot be put out so early as the general type of bedding plants.

In their earliest stages Celosias are somewhat slow of development, the germinating period included, unless gentle bottom-heat is provided, though this assistance is not absolutely essential. Single plants make good specimens, but three plants in a seven-inch or eight-inch pot are more imposing for spacious conditions. *C. Turner, Ampthill Park Gardens.*

CYCLAMEN.

To raise plants for flowering next year and in the spring of 1928, the seeds should be sown about the middle of August, either in pans or forty-eight-sized pots. Use a light, sandy compost and place the seeds on the surface of the soil, about one inch apart, covering them to their own depth with the compost. This thin sowing permits of the more forward plants being removed without disturbing the others.

Cyclamen seeds are usually irregular in germinating. The seed-pans may be stood in a cool house, but it is an advantage if they are placed in a temperature of about 60°. When fit to handle the seedlings may be pricked off into pans, or be placed singly in thumb pots, in which they should be wintered in a house or pit having a temperature of 55° to 60°, standing them on a shelf near to the roof-glass.

It is an advantage if some old mortar rubble is used in the potting compost; if this material is not available, a dusting of lime should be added, as the Cyclamen is a lime-loving plant. Where old plants have been kept for growing on, they should now be shaken out and repotted in fresh compost. Afford the roots water with great care until the plants have started to grow, and made a quantity of new roots. *J. Coutts.*

ORCHID NOTES AND GLEANINGS.

ODONTOGLOSSUM CRISPUM VAR. MRS. STANLEY BALDWIN.

This is a fine addition to the many beautiful varieties of a grand old Orchid. It is of first-rate form, size and substance, and belongs to the white-flowered section, a section which appeals far more to certain amateurs than does the one containing flowers heavily marked with rich colouring. The variety (Fig. 58, p. 123) was raised by Messrs. Charlesworth and Co., and finely exhibited by them at the Chelsea Show in May last.

CATTLEYA BRIGHTNESS.

The first flower of this fine new hybrid, raised between their C. Brilliant (Hardyana × Kienastiana) and C. Warscewiczii, is sent by the raisers, Messrs. Sanders, St. Albans. The ancestry shows that the base is of C. Dowiana and C. Warscewiczii, the colour approaching the latter parent in tint. The introduction of C. Luddemanniana, through C. Kienastiana, has its usual effect in tending to increase size and in the more tubular form of the base of the lip. The sepals and petals are light blush-rose, the broad petals having a violet shade, and all the segments have a small white base. The large labellum is almost entirely of a bright mauve-crimson colour, the base having thin gold lines. *J. O'B.*

ROSE GARDEN.

ROSE DUCHESS OF ATHOLL.

This handsome Rose (Fig. 67) was raised by Messrs. Dobbie and Co., and secured a Certificate of Merit from the National Rose Society at the Provincial Show, Bath, on July 8, 1925. It has an especially charming colour that has been described as old golden-orange, slightly suffused with Peach pink. The compact habit of growth should make the variety popular for bedding purposes; moreover, the stems are of a purplish shade and the fine foliage makes a capital setting for the brilliant blooms. The latter are of delightful form in their earlier stages of development, and they are very fragrant.

Duchess of Atholl won second prize in the seedling class for Roses at Glasgow on August 4, on the occasion of the Scottish National Sweet Pea and Rose Society's show, and also gained a further Certificate of Merit.

CABBAGE BUTTERFLIES.

During July and the two following months the gardener has to contend with many insect pests, mostly leaf-eating caterpillars, upon his Cabbages and Cauliflowers. Of these perhaps the most destructive are the larvae of the common white butterflies so well known to the dweller alike in town and country. There are three species of white butterflies, the Large White (Pieris brassicae), the Small White (P. rapae), and the Green-veined White (P. napi). The life history and habits of all three are very similar, though there are differences in the appearance of the caterpillars, and a description of the habits of the first-named, P. brassicae, will probably serve for all three.

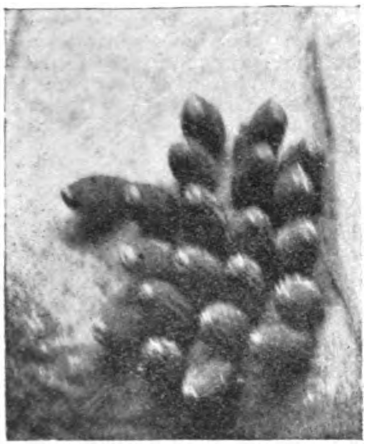
FIG. 63.—EGGS OF THE LARGE WHITE CABBAGE BUTTERFLY.

The butterfly appears in spring and early summer and deposits its eggs in clusters upon the leaf of a Cabbage or related plant (see Fig. 63). The eggs are oval in shape and yellow in colour, the shell, when seen under a lens, appearing beautifully sculptured. These patches of yellow eggs are quite conspicuous and should be looked for and destroyed. In about ten to fourteen days the eggs hatch and the young caterpillars start feeding immediately, at first they keep together but later separate and wander over the leaves, which soon become full of holes. The general appearance of the caterpillar is shown in Fig. 64. It is greenish-black in colour with a yellow line down the back, the body being sparsely clothed with bristles. The caterpillar feeds for about a month, after which it normally turns into a chrysalis or resting stage, from which in due course a butterfly emerges. This butterfly makes its appearance late in July and starts the second generation of caterpillars which feed so injuriously all through August and September. When full grown the caterpillar turns into the chrysalis, in which stage the winter is passed, the butterflies emerging again in the following spring.

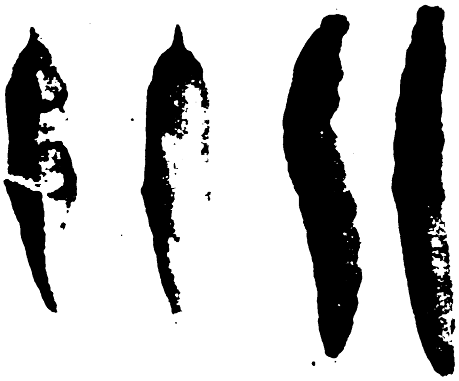
FIG. 65.—CATERPILLAR (right) AND CHRYSALIS (left) OF THE SMALLER WHITE CABBAGE BUTTERFLIES.

The caterpillar of the smaller white butterflies differs considerably in appearance from the foregoing, as may be seen on the right of Fig. 65. It is of a velvety green colour with a yellow stripe down the back, darker in the case of a green-veined white. The general appearance of the chrysalis is shown on the left of Fig. 65.

Numerous as these caterpillars are, they would be far more numerous were it not for the good offices of a small parasitic "wasp," or ichneumon fly, to which the gardener owes a debt of gratitude. This wasp deposits her eggs inside the body of the caterpillar. A little later these eggs give rise to a number of maggots which live inside the caterpillar's body, feeding upon the tissues, but avoiding the vital organs of their unwilling host. When full grown these maggots burst through the body wall and form yellow cocoons outside the now dead or dying caterpillar. Fig. 66 shows such a state of affairs; the maggots have just emerged from their host, and in one case a maggot can be seen half-way through the skin of the caterpillar. Now arises the question as to how the gardener is to supplement the useful work of the ichneumon fly and further destroy these injurious pests.

In America what is there called the "Cabbage worm" is dealt with somewhat drastically by means of arsenical spray or dusts, such as lead or calcium arsenate. In this country it is perhaps as well not to use arsenic upon green vegetables, more especially in view of the recent scare about arsenic upon foreign Apples. In all probability, however, it would be safe enough to use a lead arsenate spray or dust upon very young Cabbages. Failing arsenic, then, we have to fall back upon less efficient insecticides.

The Ministry of Agriculture recommends drenching the plants when the caterpillars are very small, with such simple solutions as two ounces of soap in one gallon of water, or two ounces of common salt in a similar amount of water. Hot water at a temperature of about 130° has been used with success.

Some kind of stomach poison, harmless to animals and human beings, is badly needed for use against caterpillars upon vegetable crops, and investigation in this direction seems to show that naphthalene emulsion may be effective.

Now is the time for the gardener to examine his Cruciferous crops for the eggs of white butterflies and the chrysalides of Small Whites. The chrysalis of the Large White is usually to be found in crevices and niches upon fences surrounding the garden. *K. M. S.*

CELERY FLY.

The insect referred to in this article is one with which every gardener ought to be familiar. This fly, with its characteristically marked wings and brown body, is known as the Celery fly (Acidia heraclei), and its maggots cause much damage annually to that plant.

The fly appears in May, and later deposits her eggs beneath the upper or lower epidermis of the leaf. On hatching, the maggots tunnel in the tissue between the two leaf surfaces. making complex tunnels which finally unite and form the well-known blisters containing several maggots. When full-grown, these larvae drop to the ground and enter upon the resting or chrysalis stage in the soil, finally hatching out about the beginning of August into the second brood or generation of flies. This second brood occasionally differs slightly from the first in appearance. the flies being of a lighter colour. The pest winters in the soil as a chrysalis.

Like most of the insect pests against which the gardener has to contend, the Celery fly is able to "carry on," in the absence of its favourite food, upon various other plants, or "alternate hosts," as they are called, which may be either weeds or garden plants. Of the other cultivated plant hosts of the Celery fly, Parsnips are most frequently attacked, and these lend themselves to a method of control known as the "trap crop," If one or two Parsnips are allowed to grow into second year plants, the fly is attracted away from the Celery to lay her eggs on these. then, when the Parsnip leaves are full of maggots, the plants should be dug up and burned. Among other cultivated host plants of the Celery fly are included Parsley and Jerusalem Artichokes. There are also some weeds which the gardener should destroy, such as various species of Heraclium, Angelica and Cotton Thistle, as all these support the maggots of the Celery fly.

Fortunately there is another insect which belongs to the group of parasitic wasps and is exceedingly beneficial, as, with others of a similar character, it is responsible for the destruction of so many as fifty to seventy per cent. of the maggots of the Celery fly. Care should be taken that these beneficial insects are not destroyed. They can easily be distinguished from the Celery fly by the possession of two pairs of colourless wings instead of one, and by the long antennae or feelers. However, in spite of the good offices of these parasitic insects, so great is the number of eggs produced by the female Celery fly that only thirty per cent. of those laid are sufficient to cause a severe infestation.

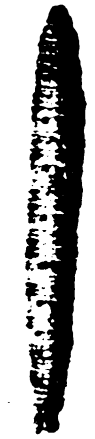
FIG. 64.—CATERPILLAR OF THE LARGE WHITE BUTTERFLY.

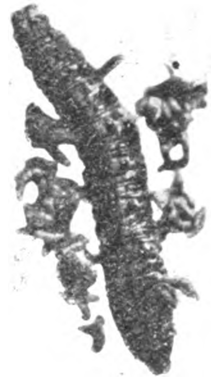
FIG. 66.—CATERPILLAR OF A LARGE WHITE CABBAGE BUTTERFLY ATTACKED BY AN ICHNEUMON FLY.

On a sunny day large numbers of the flies may be caught by means of a butter-fly net wielded over the Celery plants. The writer has knowledge of one occasion when no fewer than a hundred-and-fifty flies were caught in this manner in ten minutes over two beds of Celery. In cases of slight infestation, removal and destruction of the blistered leaves is to be recommended.

The following spray has been used with success against the Celery fly but although suitable for garden use it would probably prove too expensive for use on a wide scale:—One ounce nicotine (98%); half-a-pound of soft soap; and ten gallons of water. *K. M. S., Manchester.*

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MR. F. KINGDON WARD'S NINTH EXPEDITION IN ASIA.

I.—East of Suez.

If one must leave home, let it at least be on a fine day, so that one may carry abroad a lasting impression of England's beauty.

I was fortunate, therefore, when I left Victoria Station on February 18 to join my boat at Marseilles, for the sun shone brightly, and the countryside looked hopefully fresh and green after the deluge of the previous three weeks. We were promised a rough Channel crossing, as the freshening wind was from the south-west, but luckily we were safe in Calais before it began to get really bad; by that time the sky had become overcast, and during the long journey south, torrential rain fell while we tried to sleep in the equivalent tropical heat of a French railway carriage.

When daylight came we were in a new land, botanically speaking. Gone was the familiar green and brown landscape, gone, too, the familiar-shaped plants. Umbrella Pines striped and blotched the rugged white hills. Fields of stunted, sage-green Olive trees were dabbled with the flushed, fluffy, mistiness of Almond blossom. Giant Agaves, perched on the rocks, like pagodas, towered twelve feet into the air, and curtains of fleshy-leafed plants draped the cliffs. At 9.30 a.m. we reached Marseilles.

Those who have studied the geographical distribution of plants do not need to be told that Marseilles has a very different flora from that of England, or even Northern France—different in kind; for it belongs to the Mediterranean region, one of the most distinctive floristic regions on the earth's surface.

In tours, however, one has to distinguish between the indigenous flora and plants introduced by man for decorative effect; and, usually, man has left the impression of his preferences and requirements—in so far as they are attainable—on the outskirts of the towns, and all trees and flowers you see in Marseilles are not necessarily Mediterranean. But even allowing for the limitations of the climate, it is obvious that the French are not nearly so fond of flowers as are the English. There are very few flower-sellers in Marseilles, and still fewer flower shops. Nearly all the flowers sold in the street are exotic, and such as we see in London at the same season, though in less variety and poorer quality. Arum Lilies, Carnations, Marigolds, Freesias, and white Lilac are the most conspicuous; sprays of a locally-grown Mimosa are also sold. All these flowers are actually very expensive, though, thanks to the exchange, cheaper than in England. The 20th was a gorgeous day, and for once the Mediterranean looked bluer than even a railway poster can make it, which it so rarely, in fact, is at this season. I went out to the Parc Borély, beyond the Corniche. It is an uncouth and unkempt place. Once upon a time, perhaps, efforts had been made to redeem its stark ugliness; but on a coast where the mistral comes sweeping in from the sea, little can be done. It bends the stoutest trunk, and the trees have their heads bitten off if they dare to show them above the barricade: even the clumps of Pinus Pinea lean inland, like Coconut Palms.

Behind a thick screen of Pines is a strip of ornamental water, where more familiar trees reach quite respectable proportions. I noticed here Elm, Willow, Lombardy and Black Poplars, Cedars, and Judas tree; here and there a clump of Bamboos or a gravid Palm suggested sunshine and ozone. The Willows were already in tiny leaf, and the red Poplar catkins were fattening; but the absence of flowers was significant.

The Parc Borély, however, is more race course and track for the local speed merchants than a Jardin des Plantes. One must not think of Hyde Park. The grass, where there is any, is rank, though now studded with Daisies. There are dusty thickets of harsh, leathery-leafed evergreen shrubs, such as species of Veronica, Euonymus, Viburnum, with Laurus nobilis, Nerium Oleander, and Buxus sempervirens. Tufts of leafless and Broom-like Tamarisk grow on the outskirts; while an open, running sewer surrounds the Parc on three sides. No more cheerful are the few attempted beds of magenta-coloured Stock or jaundiced Violas, though they make a pathetic and ludicrous attempt to compete with the blue blaze of sea and sky, set off by the high lights of linen-white rock. Even when one does see a familiar tree, such as a Plane—which of course is indigenous to the Mediterranean region—it is almost unrecognisable. Either it is stumpy and gnarled, of bulky girth, or it is almost fastigiate, drawn out into the semblance of a Chinese pagoda, eighty or one hundred feet high, but more grotesque than beautiful. These monstrosities were not yet in leaf. That the effect is deliberate, and not due to the vagaries of the climate, is clear; for though the Parc is evidently short of labour, platoons of men may be seen along the boulevards, pruning the Plane trees according to plan. It is indeed for this purpose—to line the roads, that the French grow trees. No road, whether in Saigon, Algiers, or Paris, is complete without its avenue, and where we in London rarely plant even a double row of trees on either side, three rows may quite often be seen lining each side of a French road.

On the afternoon of the 20th we sailed, and five days later we reached Port Said. Here men came on board with large bunches of crimson and yellow Roses, which, though not in very good condition, were sweetly scented; one could buy a large bunch for two shillings. These Roses are grown not in Port Said, but in Cairo, and Violets also, though the latter are not fragrant. Half-way down the Red Sea we put into Port Sudan, the coming seaport of north-east Africa. It is not an inviting-looking spot at present, the coast being almost a desert, except for an occasional low scrub of what from a distance looks like Tamarisk; but the mountains behind rise to 4,000—5,000 feet. There are those who say that in ten or fifteen years Great Britain will be getting all the raw Cotton she needs from the Sudan; and as it is cheaper to send it direct to the coast at Port Sudan than down to Cairo and Alexandria, the former is bound to inincrease rapidly in size and importance.

Colombo was the next port of call, reached on March 7th. The orthodox thing for ship's passengers to do in Ceylon is, of course, to motor out to Mount Lavinia (seven miles) and have tea, and perhaps bathe; or dine at the G. O. H and go on to the dance at the Galle Face afterwards; or drive round the Cinnamon Gardens. But as I have done nearly all these things before in a place called Piccadilly, I usually seek some other distraction in Ceylon with a less Occidental flavour about it. Thus it happened that one day I found myself in a train bound for Negombo, an ancient fishing village some twenty-four miles up the coast. All this coastal plain of Ceylon is very flat, and cultivated to the last acre, with alien introductions. Ceylon is, of course, the planter's paradise—Tea, Rubber, Coconuts, etc. The Paddy fields are surrounded by Coconut plantations and round the villages are Mango trees, Jack trees dangling large fruits from their trunks (like presents tied to a Christmas tree), Betel Palms and an occasional Talipot. Every canal and river is fringed with Coconut Palms too—they are as monotonous as Date Palms in Mesopotamia, and as useful. We also passed a few Pineapple gardens, and ditches full of pink-flowered Lotus. Everywhere the vegetation is a strident, metallic green, there being very few leafless trees even during the dry season. A few Bombax trees are more or less bare except for the large pear-shaped fruits hanging in rows from their branches, like fat pupae; also the scarlet-flowered Butea. Flowers, however, are few, or appear so at this season in the welter of foliage. One sees the Gold Mohur in bloom in Colombo. Brave attempts are made at way-side stations to grow Roses, and even Chrysanthemums; the Oleander looks happier, or scarlet Hibiscus. But it is the high-explosive colours of Bougainvillea and Canna which are most effective in the intense light of the tropics.

At Negombo the shore is fringed with a deep belt of endless Coconut Palms, for very many miles. They grow in almost pure sand, where Mangrove cannot grow. Here and there above normal high water are small patches of Spinnifex grass, and a thin scrub of low Opuntia grows beneath the Coconut Palms. Thus the coast here is very monotonous.

At a fisherman's hut I obtained a green Coconut which I ate with 'honey' (jaggery), made by boiling the Coconut inflorescence: it is intensely sweet. Those whose acquaintance with Coconuts is confined to the bearded variety one knocks down on Hampstead Heath have no idea of the succulence of a green Coconut. It is brimful of sweet, cool milk, very refreshing to drink; the edible part, hard and fibrous in Bank Holiday nuts, is only just beginning to separate from the liquid and line the shell, consequently it is as soft as butter, and eaten with a spoon, like custard: mixed with the brown, Coconut 'honey' it forms a luscious dish.

But it is as a source of oil and soap—'Soap from Trees,' as the hoarding tells us with the air of one expounding delightful miracles, rather than of food, that the Coconut Palm is so valuable.

There is a very big Ficus tree (F. bengalensis, or Banyan) at Negombo, close to the old Dutch fort, over the gateway of which is inscribed A.D. 1678; probably the Banyan was sheltering the villagers long before that was put up.

Despite sea breezes, and heavy rain in the evening, Negombo in the early afternoon, with its yellow sand beach, against which the restless Indian Ocean beats thunderously, was a torment of heat. The maximum daily temperature at Colombo was now 90° in the shade, with a saturation of 74%; at night the temperature only dropped to 75°. It is impossible to feel very energetic with a shade temperature of 90° in a damp atmosphere; and at Negombo I had to walk about in the heat and glare of full sunlight, in the middle of the day, to see anything.

On the afternoon of March 15 we entered the Rangoon river, and at 4.30 tied up alongside the town. The first stage of the journey was over. *F. Kingdon Ward.*

NOTES FROM KEW.

Rainy intervals are very welcome on the well-drained, sandy Kew soil, so, despite cold winds and late spring frosts, which considerably damaged the new foliage, the majority of the trees and shrubs have made good growth, and the lawns are exceptionally green for the month of August.

The Indian Bean, Catalpa bignonioides, is the most beautiful of the very few, large, August-flowering trees. It is a wide-spreading, bushy-headed tree, native of the Eastern United States, and a particularly valuable town tree. There are several notably good specimens in the London Parks and gardens. The many-flowered panicles of white and spotted flowers are very showy. In nurseries, especially on the Continent, the name C. syringaefolia is more often used. A second species, C. speciosa (syn. C. cordifolia) is known as the Western Catalpa. It flowers ten days to a fortnight in advance of the Indian Bean Tree, has larger individual white blooms but fewer in the panicles.

The Golden Chestnut, Castanopsis chrysophylla, is a remarkably distinct and interesting large evergreen shrub or tree. Wild trees in California and Oregon occasionally exceed one-hundred feet in height, but under cultivation the species does not appear to grow fast. The best specimens are furnished to the ground with branches, therefore it is not a very satisfactory business to cut off the lower branches in the endeavour to make the Golden Chestnut form a good trunk. Rather more than twelve months are needed to mature the fruits. At present the trees are attractive, with cylindrical catkins and quantities of green spiny burs, resembling the Spanish Chestnut, which contain the edible nuts.

Spartium junceum, the Spanish Broom, is easily one of the best half-dozen summer flowering shrubs as its flowering season may extend from June to September. Normally a rather straggling, tall shrub, up to ten feet or twelve feet high, the habit is very considerably improved by pruning in a young state, followed by an annual shortening of the longest growths in March. The Spanish Broom is a valuable town shrub and particularly useful for dry, sunny banks where the large, rich yellow, Pea-shaped blossoms are borne in profusion. Plants are readily raised from seeds and should be cultivated in pots until ready for their permanent positions. The long, whip-like roots do not transplant readily from the nursery bed.

Similar treatment is also desirable for the Mount Etna Broom, Genista aetnensis, the tallest of the hardy Brooms, twelve feet to eighteen feet, sometimes more, in height. Its profusion of yellow blossoms during July and early August, make several large lawn beds very attractive.

The Shrubby Buckeye, Aesculus parviflora (syn. Pavia macrostachya), is represented by several very showy beds and border groups, all the plants being covered with cylindrical panicles of white flowers. Of shrubby habit, the species spreads by means of suckers, forming in time, wide groups of upright branches eight feet to ten feet or more in height. The usual method of propagation is by separation of the off-sets, the late-flowering not allowing sufficient time for the seeds to mature.

If there is one shrub or small tree of outstanding merit and beauty of flowering during August it is Eucryphia pinnatifolia. Although first introduced in 1859 from Chili, it is not grown so extensively as one would expect such a distinct and showy shrub would be. This is probably due to the fact that in the first few years of its growth from seeds or cuttings it progresses slowly. Layering is a useful means of propagation, the plants raised by this method being usually the first to reach the flowering stage. Self-sown seedlings are reported in one or two gardens where Eucryphias are found at their best. I am told that the number of plants of Eucryphia pinnatifolia in one very well-known Welsh garden exceeds five hundred. The best specimens at Kew are growing in beds of the Mediterranean Heath which provided shelter when the plants were small and shade for the surface soil. A liberal supply of peat and leaf-mould should be incorporated with the soil when planting.

The forms or varieties of Buddleia variabilis provide a wealth of flowers during July and August. The practice of hard pruning is desirable, not only because it improves the vigour of the growths and size of the flower spikes, but also retards the flowering season by three or four weeks, which is a valuable asset. Readily propagated by seeds and cuttings, and thriving in most soils, Buddleia variabilis is one of the best tall, flowering bushes for the back of shrubbery borders. It is a notably good shrub for town gardens and is suitable for training against tall buildings.

Autumn-flowering Heaths thrive in the light Kew loam, large masses of Erica vagans varieties, the Irish Heath (Daboecia polifolia) and the numerous varieties of Calluna vulgaris being most effective in lawn beds, and borders.

The late summer and autumn flowering Spiraeas are more numerous than is generally recognised in gardens if one may judge from the numbers cultivated. The varieties of S. japonica, with their showy, flattish inflorescences, are very effective dwarf shrubs, averaging, when hard pruned in spring, two feet to three feet in height. The variety Anthony Waterer is the best known, with its rich, carmine-red flowers, and is a valuable dwarf shrub for lawn beds, and bold groups along the front of shrubbery borders. The variety Bumalda is lighter in colour than the foregoing; the variety alba is very showy when the dwarf, compact bushes are covered with pure white flowers. The variety glabrata is stronger in growth, with showy, rosy pink flowers, a lawn bed being very effective.

The erect pyramidal panicles of the forms of Spiraea Menziesii on upright bushes four feet to six feet high, provide a pleasing contrast to the dwarf S. japonica varieties. Among the varieties at Kew, S. Menziesii var. triumphans is the best, with rich purplish rose, erect panicles; the variety eximea has rose-pink inflorescences. S. salicifolia and the varieties lancifolia and latifolia are also conspicuous in the collection of Spiraeas mid-way between the Temperate House and the Pagoda.

On the lawn between the Holly bushes on the west side of the Temperate House a dozen beds of Ceanothus, each containing fifteen or sixteen plants of one variety, provide a wealth of colour. C. Arnoldii is vigorous in growth with quantities of small, pale blue inflorescences. The old favourite Gloire de Versailles with large clusters of rich blue flowers is still unsurpassed. Topaz is a rich blue, while deeper still in colour is Henry Defosse; Ceres is a free-growing, pale mauve variety. The best of the pale pink varieties are C. americanus opacus and Marie Simon. *A. Osborn.*

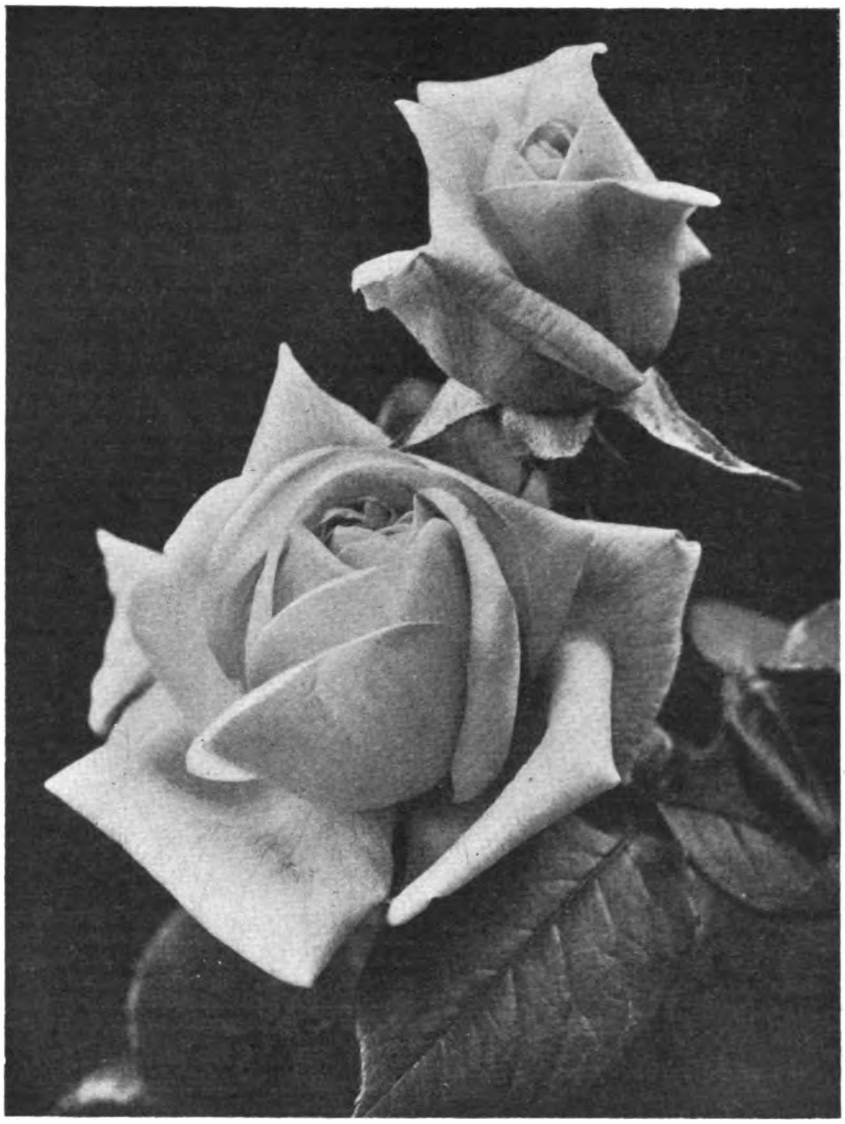

FIG. 67.—ROSE DUCHESS OF ATHOLL.

(see p. 128.)

VICEREGAL GARDENS, SIMLA.

Situated on the summit of a mountain at an altitude of a mile-and-a-third above sea-level, open to both the hot and cold winds which pass over the Himalayas, and subject to long periods of drought, severe hail and snow storms, the gardens and the Viceregal Lodge, Simla, nevertheless present a wonderful example of British perseverance and determination, resulting in a horticultural success under great difficulties.

Terraces and Lawns.

It is now twenty years or more since Mr. Long first took charge, and consequently he has had the honour of serving under several Viceroys, all of whom have interested themselves in garden construction and added some lasting example of their taste.

Originally, the site was rugged and irregular, necessitating much levelling and blasting to form convenient platforms for the splendidly-built mansion and the spacious lawns and terraces which surround it. Although not very extensive, the gardens are tastefully and conveniently laid out, and, at the time of my visit, were a blaze of colour, a fact, all the more surprising when one considers the difficulties of the position and altitude. Mr. Long thoroughly understands which plants succeed at Simla and undoubtedly makes good use of his experience.

Hardy Plants.

Herbaceous borders are a feature, and it is astonishing how well the plants thrive here. The main lawn, where so many garden parties take place, is bordered by one of bold dimensions, as also is the long, winding walk which leads to the old English Rose garden. The colouring of the masses and groups contrasts or harmonises according to their respective requirements and surroundings; pinks, mauves and blues blend with each other, and are backed up by the stronger yellows and crimsons, with an occasional mass of white or scarlet. The groups most in evidence were those of Chelone, Anchusa, Larkspur, Phlox, Geum, Gladiolus, Statice, Iris, Artemisia, Gypsophila, and many of the best annuals, particularly Antirrhinums, Mignonette, Godetias and Clarkias, with here and there masses of delicately-coloured Violas, and interesting foliage plants.

I also noticed many interesting species of Lilies with Hyacinthus candicans, while Hydrangeas are grown extensively in bold masses on the shadier sides of the lawns. Many interesting creepers adorn the walls of the terraces and mansion. Jasmines of many kinds, Plumbagos, Solanums, and most of the best rambling Roses are well cared for and trained as they should be.

It was a pleasure to notice that many forest trees had been preserved, as these give restful shade during the hot months which separate the winter from the monsoons.

Most of the soil used in the Viceregal Gardens at Simla had to be brought a long distance and is exceedingly porous, necessitating much watering; and all the work of carting, watering, planting and cleaning is done by natives,

Floral Decorations.

A walk through the principal rooms of the Viceregal mansion led me to observe that here also Mr. Long's services are conspicuous, the many and beautifully-arranged vases of flowers, and boxes of flowering plants are all filled with artistic taste. The spacious verandahs were also amply furnished with well-grown specimens of evergreen and flowering plants. Mr. Long is also called upon to decorate the banquet tables, where so many notabilities meet; he has also several other gardens under his charge, including Marholra, in the mountains, and those at the Viceregal Lodge, Delhi, where the Viceroy resides during the winter months, but which at this season (June) is sweltering in a temperature of between 105° and 115°. *George Burrows.*

TREES AND SHRUBS.

LIRIODENDRON TULIPIFERA.

At the end of July, I observed our aged yet handsome-foliaged Tulip Tree was in flower. The nearest branches, adorned with blooms, were between thirty and forty feet from the ground. The flowers presented the appearance of glistening, honey-coloured cups, each somewhat resembling an open Tulip flower in shape and size—hence the common name. The flowers were more numerous on the sunny side of the tree, and in our Scottish climate they were most enticing and charming at this time of the year.

Although the flowers are borne at the extremities of the branches, nature has so arranged the greenery of dark glossy leaves to completely hide, in most cases, the short peduncles, so that the blooms appear to spring from the foliage. The Tulip Tree belongs to the Magnolia family, is a native of North America, and was introduced in 1668. I have seen it recorded that trees do not produce flowers until they are about thirty years old. In late October and early November the leaves of the Tulip Tree present a beautiful picture of rich yellow, and when viewed in the morning or afternoon sunshine of autumnal days, a large tree is a great joy. *D. A., Midlothian.*

INDIGOFERA GERARDIANA.

This very beautiful Leguminous shrub is hardy in sheltered situations, either as a compact bush in the open shrubbery or in the shrub-border, or against a south or west wall, preferably in the latter position, for so planted, it makes better growths and flowers more freely.

The flowers are pale red or carmine, fifteen to twenty on a raceme; the leaves are shortly-stalked, greyish-green above and glaucous below. A native of India, it is synonymous with I. floribunda, and has been referred to I. Dosua, which is, however, a distinct species.

The species under notice is very late in starting into growth, making very little progress before June, but it is in flower during July. Turfy loam and leaf-soil make an ideal rooting medium, while propagation may be effected from seeds or cuttings; well-ripened wood is essential to freedom of flowering. *R. A.*

SCOTTISH SWEET PEA TRIALS.

Of the seventy varieties of Sweet Peas grown in the trial grounds at Helensburgh, twenty-five of the best were staged for the final decision of the judges at the exhibition of the Scottish National Sweet Pea Society, Glasgow, on August 4. The results are as follow:—

Gold Medals.

Olympia (E. W. King and Co.)—An improved Royal Purple, flowers larger and of good colour and substance.

Chieftain (Cullen and Sons).—Deep mauve or heliotrope; one of the largest blooms in the trials and a variety that withstands the weather better than existing varieties of its class.

Silver Medals.

Royal Mauve (R. Bolton and Son).—Richer in colour than Chieftain and an acquisition to the mauve class, but the two are much alike in colour.

Mrs. A. Searles (H. Damerum).—A distinct and beautiful orange-cerise which glows in the sunshine and surprise was expressed that it did not receive a higher award. Four-flowered stems predominate, and the shade, which is quite distinct, is unaffected by the weather. This variety gained a First-Class Certificate at the N.S.P.S. trials at Twickenham this year, and was reserved for that society's Gold Medal.

Certificates of Merit.

Model White (Bolton and Son).—Some experts considered this production to be the best novelty in the trials, and a worthy successor to Edna May and Constance Hinton. There is both substance and size in the flowers, which are rendered all the more attractive by a sheen on the standard.

Red Gauntlet (Dobbie and Co.).—This was raised by Mr. Malcolm and claimed to be an improvement on Crimson King, but some critics preferred Sybil Henshaw.

Nos. 52 and 53 (Atlee Burpee and Co.).—The former is described as salmon-cerise in the trials, while the latter suggests Doreen, but the magenta shade is more predominant.

Lilac Queen (F. C. Woodcock).—A useful decorative Pea.

No. 21 (Morse).—A further addition to the cerise shades. The colour has a tendency to become pink with age, and in notes made at the trials it is recorded that the standards have the fault of folding back.

Firebrand (Chas. Elliott, Illinois).—Described in the trials as orange-cerise, the standards being of the former colour and wings of the latter. It has shapely blooms of a large size, with the proportion of three's and four's about equally divided.

No. 42 (Torrance and Hopkins, Busby).—This orange-scarlet variety withstood the vagaries of the weather in a trying season, and although there is a suggestion of magenta at the base, the colour is attractive.

Violet (J. Stevenson).—This novelty was not impressive at Helensburgh, but as it introduces a new colour in the range of Sweet Peas the judges gave it recognition.

Daventry (E. W. King and Co.).—This is as nearly orange-scarlet as possible. Some folks might find fault with the spacing of the blooms, a defect that is seen in the three-flowered as well as the four-flowered stems.

MARKET FRUIT GARDEN.

Although the rainfall of July (2·19 inches) was slightly below the average at my place, showers were frequent enough to keep the soil moist and the air humid during the greater part of the month. This, with the great heat experienced on several days, produced conditions that were conducive to very rapid growth. Young fruit trees in particular, showed great improvement. Unfortunately the conditions were exceptionally favourable also to the spread of fungous diseases. Scab was still active on Apples and brown rot attacked the fruit of early varieties of Plums, a proportion of which had split and so given easy access to the disease. The marketing of soft fruits was finished by the middle of the month, and a start was made with Plums and early cooking Apples in the last week, which is the usual time, if not a trifle late. Thus a season which made a very early start has gradually got back to normal.

Poor Outlook.

Most market growers are facing a very poor outlook this year. The failure of the Apple crop seems to be almost universal and the marketing season for Plums has made a bad start, prices being low. This is most disappointing, as early varieties are not very heavy. It is due to the abundance and excellence of Plums from the Continent and to the general slackness of trade caused by the coal situation. There is no sale this year for anything at all dear. What the Plum trade will be like when it comes to the marketing of Victoria and Monarch does not bear thinking about. These varieties are heavy almost everywhere and already advance contracts for Victoria have been made at ridiculous prices. The green thinnings of my Victoria Plums realised 3s. to 4s. 6d. per half-bushel and it looks as though these might be the highest prices I shall receive for this variety this year. A fine sample of Rivers Early Prolific sold at only 7s. per half bushel, being priced lower in the shops than the vastly inferior but more showy French Orleans. Apples, of course, are wanted;

but the crop is almost negligible. First-grade Early Victoria, the best of the early cooking Apples, realised 12s. per bushel, which is very good.

An Inferior Apple.

I have just rid my place of an undesirable Apple by grubbing an oft-condemned block of Duchess of Oldenburg. This was planted many years ago on the recommendation of a grower who found it to be his most profitable variety. With me it has been one of the worst. It is one of those undesirable varieties which have the appearance of a dessert Apple with the quality of a cooker, yet without the size desirable in the latter. Its only virtue is its wonderful colour; but if it is left on the trees long enough to acquire this, a large proportion of the fruits usually drops. The colour, of course, will sell it in a year when dessert Apples are scarce, and I have known it to make a fair price, but in most seasons it is difficult to dispose of. It may be just worth growing in districts where it does well; but with me it never looks happy, and is one of the worst varieties for scab. The land will immediately be ploughed shallow and worked about to clean it. Later on it will be manured and deeply ploughed ready for planting. The roots, some of which are bound to be left in the ground, will probably prevent subsoiling. I like to grow a crop of Potatos before replanting, but on this occasion I have some fine young Black Currant bushes which must be planted out in the coming winter, so the land will have to be got as clean as possible without the change of crop. The question is what top fruit to plant over the Currants. My first intention was to put in Plums, which are probably more naturally suited to the district than Apples; but it is a pity to have a belt of Plums in the middle of an Apple orchard, owing to the need for different treatment in the way of spraying. I shall probably try the Apple Langley Pippin, which is now being planted to some extent for market in this country. It is prolific and of attractive appearance, whilst the quality is fairly good. If it has a fault for market use it is that it is rather soft, but it should be suitable for sale in local seaside resorts.

Brown Rot.

The fungous disease, brown rot, is particularly bad this season. I do not refer to the well-known rot of the fruit, though this is prevalent, so much as to the more serious form of the disease known as blossom wilt (Monilia cinerea). This disease, which enters in the first place through the blossom, which it destroys, next kills the spur, and then may extend into the branch, causing a die-back or canker which may affect a large area of the tree. Sour Cherries have been particularly badly affected this year, almost wiped out in some places. Apples, Plums and Pears also are attacked. Different fungi are concerned on some of these subjects, I believe, but they are allied, and it is sufficiently accurate for the practical grower to call them all brown rot. The wither-tip trouble on Plums is another form of the disease A true remedy has yet to be found. All we. can do at present is to cut out and burn all dead branches, shoots and spurs, and to collect and burn affected fruits. This removes a fruitful source of the disease, because spore pustules would form on the dead material ready to distribute the trouble next spring. Winter spraying with a tar oil wash does help, and may protect the blossom, as it has done in the case of my President Plums, mentioned in recent notes (p. 53), but the control is apparently not lasting. Probably the exposed spores are burnt off, but other pustules form and carry on the work of destruction if the weather conditions are as favourable as they have been this year.

Depth of Soil.

One of the most important conditions for fruit-growing is a good depth of soil. There are examples of fruit being grown successfully on quite shallow soils, even over subsoils that appear to be most unfavourable; but, generally speaking, the best fruit farms are to be found on deep soils, generally free-working loams which have good natural drainage. My land is very variable, and patches of it are much too shallow. One plantation in particular is giving me trouble on this account. It was planted with bush Apples eight years ago. Most of them have done well, but in the last two years a good many of them have become unhealthy, and some have died. These failures are all on the shallow patches, in some cases with sandstone rock very close under the surface. I can only try generous treatment with farmyard manure in the hope of keeping the roots near the top. Where trees actually die I have the site dug out deeply and fresh soil brought to give the new trees a fair start. Burnt earth, and wood-ash from rubbish fires, mixed with the soil around the roots, are always a great help to young trees on my land. This treatment was suggested by the fine development of young trees planted on spots where there had been fires. The value of the ash might be taken as a hint that potash is needed; but I think the benefit must be mainly mechanical, as I cannot obtain the same result from the use of potash manures. *Market Grower.*

REMARKS ON THE CONDITION OF THE FRUIT CROPS.

(See Tables and Summaries, Ante, pp. 111-117.)

SCOTLAND, N.

Ross-shire.—The fruit crops in this district are poor, owing to the late frosts and bad weather experienced during the flowering period. Caterpillars and aphides have been very troublesome. Black Currants were an average crop and of good quality; Raspberries promise well, and Strawberries were an average crop, but very late. *John Melrose, Ardross Castle Gardens, Alness.*

Sutherlandshire.—Apples gave a gorgeous show of blossom but the fruits did not set well and the crop is very poor in quantity. Cherries, Pears and Plums, however, have good average crops, which promise to be of good quality. Small fruits, such as Gooseberries, Loganberries, Red and Black Currants, promise well, but Raspberries were only a very moderate crop. Strawberries were not good at Dunrobin, but in several places in the county, on heavier soil, they are a success and heavy crops are reported. The soil at Dunrobin is of a light, sandy nature, overlying a subsoil of gravel. *W. F. Game, Dunrobin Castle, Golspie, N.B.*

SCOTLAND, S.E.

Berwickshire.—Gooseberries have been a good crop with us, though in some places they gave a poor return. Black Currants and Raspberries were a fair crop but rather small with us. Morello Cherries seem to have suffered from the late frosts and are rather scarce. *Walter Richardson, The Gardens, Milne Graden, Coldstream.*

SCOTLAND, E.

Banffshire.—Seven degrees of frost on April 17 and 5° on May 19 spoiled the fruit crops in this district. *Geo. Edwards, The Gardens, Ballindalloch.*

Flintshire.—The fruit crops, generally, are below the average. Apple trees flowered well but suffered from late frosts, many trees being fruitless. The best cropped are: James Grieve, Wealthy, The Queen, Victoria, Warner's King, Lady Sudeley and King of the Pippins. Pears are very good, especially Williams' Bon Chrêtien, Jargonelle, Louise Bonne of Jersey, Pitmaston Duchess, Conference, Catillac, Beurré Hardy, Durondeau, and Doyenné du Comice. Plums are well over the average and the best varieties are: Early Rivers, Victoria, Gage Plums and Coe's Emperor; we have also a fair lot of Damsons. Strawberries were a fair crop and of good flavour, especially Laxtonian, but soon over. Gooseberries were plentiful, also Raspberries and Red and White Currants. Black Currants cropped fairly well, but the fruits were not so large as usual. The soil is light to heavy on sand and clay. *Wm. G. Rolfe, The Gardens, Gredington, Hanmer.*

Forfarshire.—During the end of April and May, we had unfortunately a spell of cold frosty weather, with hail showers and very cold north winds, which practically ruined the prospects of Plum and Apple crops, which up to that time were remarkably good. Black Currants were only half the crop expected. Raspberries, Red Currants and Gooseberries were good. *Robert Bell, The Gardens, Kinnaird Castle, Brechin.*

——All fruit trees and bushes in this district showed abundance of blossom, but owing to the severe frosts during the middle of May crops will be very light, especially of Black Currants, which were almost a failure. Early Strawberries were also affected, although not to the same extent. Apples promise well, but aphis is very prevalent this year, more so than in previous years. Past experience of hard winters has always produced the same unsatisfactory results in regard to fruit crops in this district and usually an increase of pests follows. *J. B. Peffers, Panmure Gardens, Carnoustie.*

Kincardineshire.—Since fruit trees and bushes came into flower the weather has been favourable and a good average set has been the result. Our soil here is fairly heavy and can withstand a good drought without anything suffering. The climate is very changeable, and we often experience cold winds from the sea. *Wm. Thomson, The Gardens, Ury House, Stonehaven.*

Midlothian.—In the spring fruit trees never looked more promising, being absolutely white with blossom, but cold nights and frosts have been the cause of complete failure in the fruit crops. *W. Crichton, Morton Hall Gardens, Liberton, Edinburgh.*

Perthshire.—During the flowering period fruit trees and bushes gave promise of bumper crops, but a few nights' frost effectually lessened the Plum crop, especially on standard trees. Cherries, although they set freely have not swelled so well as expected. Strawberries were a good crop, but about a fortnight later than last year. Gooseberries and Black Currants have borne heavy crops. Black Currants had their foliage damaged by hail but little harm was done to the fruits. *James McGregor, Rossie Priory Gardens, Inchture.*

Stirling.—The blossom on all fruit trees again gave promise of a bountiful crop. Unfortunately, 12° of frost were registered here on the mornings of May 14 and 15, and Black Currants were reduced to less than half a crop. Many Gooseberries dropped but the crop is a good one. Plums, except on walls, are a failure. Cherries, both early and late, were good and of splendid quality. Early Strawberries were good, but late sorts failed to develop to any size on account of the drought. Apples are an average crop and fruits are swelling satisfactorily. *James D. Cunningham, Duntreath Castle Gardens, Blanefield.*

SCOTLAND, W.

Ayrshire.—The soil here is a medium, well-drained loam, and situated as we are about a quarter-of-a-mile from the sea, we did not suffer very much damage from the frost which occurred about May 15. Some gardens further inland suffered very severely, and even Gooseberries, which were then of fair size, were frozen so badly that they dropped wholesale. Insect pests have not been troublesome so far, our greatest enemy being canker, and other fungous diseases for which lime-sulphur spraying is being used with varying success, and experiments made by transfusion of sap of non-cankering varieties. *A. T. Harrison, Culzean Castle Gardens, Maybole, Ayrshire.*

(*To be continued.*)

INTERVARIETAL DIFFERENCES IN THE POTATO.

(*Concluded from p.* 108.)

(2) Colour and Condition of the Skin.

Potato tubers may be coloured, parti-coloured, white or russet.

(a) *Coloured Tubers.*—The colour of the skin is only fully developed when the plant reaches maturity. The intensity of the colour, however, depends largely on soil conditions: in sandy and peaty soils the colour is usually highly developed, whereas in clay there is marked diminution of the intensity. The colour is at its highest in autumn and with age it fades slightly. The red and blue colouring is due to a pigment dissolved in the cell-sap of the periderm and the peripheral cortex. Distinctions may be drawn within each of the two groups. Thus Eightyfold is not so densely coloured as Edzell Blue, or Arran Rose and Early Pink Champion so deeply as Flourball; the different tones and shades of colour cannot be described in words without references to a chart, but with practice, the reader can readily familiarise himself with the various types and the modifications of these consequent on variations in soil. In some varieties, e.g., Rector, the eye tissue is much more highly coloured than the remainder, a characteristic quite useful for identification.

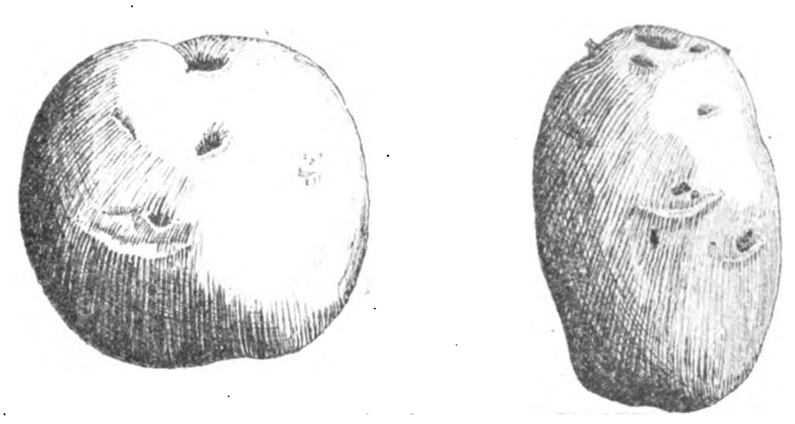

FIG. 68.—TYPES OF POTATO TUBERS.
Left, round · right, oval.

(b) *Parti-coloured Tubers.*—In parti-coloured tubers the pigment is the same as described above; its distribution, however, is not uniform but localised, some of the skin being white. In some parti-coloured tubers the colour is situated mainly in the region of the eye, e.g., Di Vernon, King Edward, K. of K., Katie Glover, Northern Star, Lochar, Catriona, and Beauty of Bute; in other varieties e.g., the Apple, this condition is reversed, the tissue about the eyes being white and the remainder coloured. Finer distinctions can be made in this group than in the previous one, and the basis of these distinctions is the relative amount of colour present. In some types, e.g., Northern Star, Lochar, and Marquis of Bute, the pigment develops in the region of the eyes and lenticels, but only faintly, if at all elsewhere; others, such as Catriona, K. of K., Beauty of Bute and Katie Glover, have more colour, but mostly concentrated about the eyes; in others, again, the colour has a wider distribution, e.g., King Edward, Buchan Beauty, and Fortyfold. In the last mentioned variety the coloured areas exceed the white areas in extent.

Both whole-coloured and parti-coloured varieties are subject to occasional variations: thus Di Vernon, Catriona and Arran Victory have been known to produce white tubers; King Edward, on the other hand, may give rise to whole-coloured tubers.

(c) *White Tubers.*—The great majority of commercial varieties have what are known as "white" skins. The term "white" is apt to be misleading, as no variety has an absolutely white skin: it is used commercially to include a wide range of yellow shades. Varieties may be differentiated by the shade of yellow; most yellow-fleshed varieties, especially where the colour is highly developed, have yellow skins, e.g., Duke of York, Myatt's Ashleaf and Immune Ashleaf; other varieties have pale yellow skins, as, for example, Great Scot; but the greatest number have skins which are even paler than the Great Scot type. Whiteness in tubers is due to the absence of visible pigment in the cork cells. On being exposed to light and air the tubers of many white varieties develop colour, e.g., Epicure, Royal Kidney, Dean, Templar and Norna. This character is especially frequent in blue-sprouted varieties and the breeder must often discard seedlings because of it.

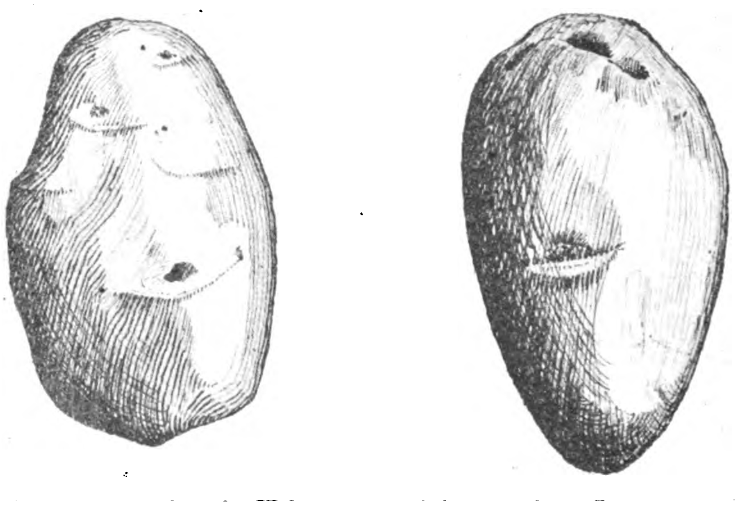

FIG. 69.—TYPES OF POTATO TUBERS.
Left, oval (pointed); right, pear-shaped.

(d) *Russet Tubers.*—Several commercial varieties have russet skins and for that reason are very easily identified. How exactly these types arise is not known, but it is a noteworthy fact that each has its white-skinned homologue.

Tuber skins may be rough or smooth, depending on the thickness of the skin. The following varieties have smooth skins:—Lochar, Marquis of Bute, King Edward and Witchhill; rough-skinned varieties are:—Duke of York, Gregor Cups and Ally.

(3) Position and Depth of Eyes.

The eyes are always most concentrated at the apex of the tuber. The majority may be in a cluster on the tuber point or they may be grouped some distance from the point, when they are said to be on the shoulder. The remainder are distributed spirally over the tuber surface, the internodes becoming greater towards the heel end. The basal internodes are usually longer in pear-shaped than in oval (pointed) tubers. In some varieties, e.g., Epicure, King George, British Queen and Early Market, there is a distinct swelling below each eye, "raised eyebrows" being the term employed to described this condition. The eyebrow itself often affords useful assistance; in the Abundance, for example, it is long, while in Arran Comrade it is short. Some varieties, e.g., Great Scot, President and Rhoderick Dhu, may be distinguished from others, such as Ally, by having more numerous eyes. Eyes may be classified as deep, medium and shallow: in the first group are found such varieties as Epicure, Champion, Rocks and Fortyfold; in the second, British Queen, King George, Kerr's Pink, Rhoderick Dhu and Great Scot; and in the last Evergood, Templar, King Edward, Witchhill and Duke of York.

(4) Colour and Consistency of the Flesh.

As with the skin, the flesh colour is only fully developed in the mature tuber. Varieties are described as having yellow, pale yellow and white flesh; the yellow pigment is elaborated in the leaves and transmitted to the tuber. Duke of York is a good example of the first type; Bishop of the second; and Edzell Blue of the last. Some varieties, especially when immature, are characterised by the frequent development of colour in the region of the vascular cylinder of the tuber. The Blue President Rogue*, Herd Laddie and Flourball show this trait fairly constantly. Again, the cut surface of a few types turns rapidly red brown, a feature of special importance in Majestic, and due probably to enzyme action. The consistency of the flesh is such that some varieties may be called soft and others hard-fleshed—conditions which may be determined by cutting. Generally, earlies have soft flesh and lates hard flesh, but exceptions exist. Comparisons, however, must be made with mature tubers and those free from virus or other diseases. As examples of early varieties, it may be stated that Puritan,

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* See *Miscellaneous Publications*, No. 3. Board of Agriculture for Scotland.

Ninetyfold and May Queen have softer flesh than Duke of York, while, amongst late sorts, Langworthy and Crusader have harder flesh than Majestic or Nithsdale. It should be pointed out that much practice is necessary before one can make fairly definite decisions in this way.

(5) TYPE OF SECOND GROWTH.

The type of second growth is frequently very helpful in determining varieties, but its occurrence is not general, being dependent on the season, and can therefore be applied only on special occasions. Second growth occurs where plants have commenced to ripen and where growth has been renewed by altered weather conditions. There are several distinct forms of second growth, viz., cracking formation of secondary tubers, protrusions from tuber eyes and prolongation of the tuber axis. Cracking is a distinct feature of Ally and Scottish Chief; the formation of secondary tubers—separated from the primary ones by a length of stolon—occurs in Up-to-Date, Northern Star, Dominion, Pathfinder and Rhoderick Dhu; protrusions from the eyes appears in British Queen, King George and Majestic; and prolongation of the tuber axis is found often in long but seldom in round Potatos, e.g., British Queen, King George, Puritan, Catriona, and occasionally in Golden Wonder. The flesh of the prolonged portions of Golden Wonder and Catriona is generally lighter coloured than that of the remaining tuber tissue.

(6) MICROSCOPIC CHARACTERS.

The ability to produce a large percentage of superior starch grains would appear to be varietal. Johnson and Boyle[*] have compiled a table showing the average size of the largest and medium sizes grains for many commercial varieties: Shamrock and Great Scot have large average grains, while Early Rose and Royal Kidney have small average grains. It is to be noted, however, that size of grain varies with size of tuber and tubers must be uniform to make the results comparable. In making such comparisons it must be borne in mind also that the largest grains are found generally in the tissue lying immediately adjacent to the vascular cylinder. Artschwager[†] has shown that some American varieties are

CLASSIFICATION OF THE TUBERS OF SOME COMMON POTATO VARIETIES.

1.—WHITE TUBERS.

ROUND.			OVAL.			PEAR-SHAPED.			OVAL (POINTED).
White Flesh.		Yellow Flesh.	White Flesh.		Yellow Flesh.	White Flesh.	Yellow Flesh.	Pale Yellow Flesh.	White Flesh.
Round (flat)	Spherical.	Spherical.	Short.	Long.	Short.				
Arran Comrade Great Scot Rhoderick Dhu *East Neuk* Burnhouse Beauty Ally (a) President General *Conquest* *Arran Chief*	Epicure America Rocks Bobbie Burns	*Champion*	*Templar* * *Abundance* † Evergood * *Irish Chieftain* ‡ Up-to-Date † Tinwald Perfection † Arran Consul (a) ‡	Witchhill * Royal Kidney † Norna † Magnum Bonum † Majestic (a) ‡ *May Queen* ‡ *International Kidney* ‡	*Sharpe's Victor* *	*Langworthy* † Sharpe's Express † Crusader † *Nithsdale* *	Duke of York (a) ‡ *Immune Ashleaf* † *Myatt's Ashleaf* † Dargill Early †	Bishop (a)*	British Queen ‡ King George ‡ Puritan ‡ Ninetyfold ‡ Eclipse (a) †

2.—RED TUBERS.

ROUND.			OVAL.		PEAR-SHAPED.	OVAL (POINTED).
White Flesh.		Yellow Flesh.	White Flesh.		White Flesh.	White Flesh.
Round (flat).	Spherical.		Short.	Long.		
Kerr's Pink Flourball Reading Russet Shamrock Utility	Early Pink Champion Gregor Cups Sharp's Pink Seedling	Rector Lord Rosebery Yam	Arran Rose ‡ Ardneil Rose † Crimson Beauty †	Waverley *	Red King Edward (a) † Mr. Bresse * Cardinal †	Early Rose ‡

3.—PURPLE TUBERS.

ROUND.		PEAR-SHAPED.	
White Flesh.		White Flesh.	Yellow Flesh.
Skin Dark Purple.	Skin Light Purple.		
Edzell Blue *Arran Victory* *Herd Laddie*	*Eighty-fold*	*Pride of Bute* †	*Keppleston Kidney* †

4.—PARTI-COLOURED TUBERS. (The Skin may be White and Purple or White and Red).

	ROUND.			OVAL.		PEAR-SHAPED.
	White Flesh.		Yellow Flesh.	Short.—White Flesh.	Long.—Pale Yellow Flesh.	White Flesh.
With (a) Purple.	*Fortyfold* *Buchan Beauty*		*Purple Champion*		*Di Vernon* ‡ *Catriona* ‡	
	Eye Pink.	Eye Red.				
With (b) Red.	Lochar Northern Star Marquis of Bute	Mein's Early Round Beauty of Bute John Bull		K. of K. ‡ Katie Glover ‡		King Edward (*a*) †

5.—RUSSET TUBERS.

ROUND. White Flesh.	OVAL (SHORT). White Flesh.	PEAR-SHAPED. White Flesh.
Village Blacksmith Brown Rocks	Field Marshal †	*Golden Wonder* †

ABBREVIATIONS.—* Thin Tubers. † Tubers of medium depth. ‡ Thick tubers.
The varieties in italics have blue sprouts, the remainder pink sprouts. Those varieties marked (a) are rather inconstant in shape.

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[*] "The Industrial and Nutritive Value of the Potato in Ireland." *Jl. Dept. of Agric. and Technical Instruction for Ireland*, Vol. xviii, No. 4.

[†] *Journal Agric. Research*, Vol. xxvii, No. 11.

characterised by having "stone cells". These are visible when sections through the region of the bud are examined microscopically. In other varieties such cells are wanting. In this connection nothing definite can be stated as yet about British varieties.

THE SPROUT.

Varieties differ in the periods required before sprouting begins, some, such as Early Pink Champion, May Queen, Duke of York, British Queen, Arran Chief, Rhoderick Dhu and Great Scot, sprout readily, but others, including Arran Consul, Witchhill, Immune Ashleaf, Norna, Tinwald Perfection and Golden Wonder, are much slower in sprouting. Apart from the rapidity of development there are distinct differences between varieties in the thickness of the sprouts: Early Pink Champion, Great Scot, and America, especially the first mentioned, have thick sprouts; Evergood, King Edward, Majestic and Cardinal have thin sprouts.

Grown in diffuse light, the colour of the sprout may be (1) Faint pink, i.e., white on greenish-white with green tips, but generally showing a little pink which increases at the base or at the tip on exposure. The variety, Ally, is a good example of this class. (2) Pink, generally on a white or greenish white ground, the colour at the tip being similar to the colour at the base. The greatest number of pink-sprouted varieties are to be found in this group. (3) Blue or blue purple, when the tip and base are always a shade of blue. Generally the whole sprout becomes coloured. In all groups colour is always most intense at the lenticels.

In the existing schemes for the classifying of Potato varieties the fundamental bases are the sprout colour, the maturity and the tuber shape. However, during the growing season there is no sprout to examine, hence it is of importance at times to learn how the sprout colour may be inferred from a study of other parts of the plant. The following colour connections have been determined.

1. All plants having blue or blue-purple predominating in the flowers have blue or blue-purple sprouts.
2. All plants having red or red-purple predominating in the flowers have pink sprouts.
3. The colour of the sprout corresponds with the colour, if any, on the tuber itself, including the scale leaves, or on the underground runners.*

These rules may not always be applicable: some varieties do not flower and others have white flowers; again, many varieties, especially earlies, have stolons on which as yet no colour has been observed. Nevertheless, as guides, they are often very useful in the field.

Hairs are to be found on all normal sprouts, and these may be used on rare occasions in separating varieties. Sprouts may be grouped as follows:—(1) Hairs frequent, e.g., Duke of York and Arran Comrade, and (2) hairs few, e.g., Great Scot and Arran Chief.

If the sprouted tuber is not planted, but retained in the storage house throughout the summer, further varietal differences appear: some varieties, such as Ben Cruachan, Shamrock and Sharpe's Pink Seedling, develop thickened, tuber-like sprouts; while others, such as Great Scot, Arran Victory and Arran Chief form long, branched sprouts, with small leaves, but having no tendency to thicken.

THE STOLONS.

There exists a great diversity of types of stolons: in Templar and Ben Cruachan they are long, profuse and purple, in Great Scot they are shorter, fewer and white. Generally, early varieties have very short stolons, not exceeding one or two inches in length. There is a correlation between the occurrence of blue or blue-purple on the stolons and blue sprouts: and between red and red-purple on stolons and pink sprouts. Often the colour is limited to the lenticels. Absence of colour from stems and stolons is associated with a white tuber skin. *T. P. McIntosh.*

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* An apparent exception to this rule is reported as occurring on a "sport" from Arran Victory.

HOME CORRESPONDENCE.

[*The Editors do not hold themselves responsible for the opinions expressed by correspondents.*

Fulham Palace Gardens.—To-day (Aug. 9) I had the pleasure of being shown over the gardens at Fulham Palace by the Bishop's gardener, Mr. Turner, and think that a few notes of what I saw may interest your readers. Personally, I was surprised to find such perfection within London itself. While standing under the grand old trees one could easily imagine the palace and its gardens in the heart of the country. An extremely fine Catalpa made a stately and beautiful picture on the lawn with its bright green leaves and its panicles of white flowers; this specimen has been allowed to develop fully, having all the room it needed. There are few stately trees with sweetly perfumed flowers, but the perfume of the flowers of this tree during the afternoon sunshine added yet another attraction. Plane trees are common, but such an one as Mr. Turner tends are very rare. Here is a tree of enormous size, having branches as large as the Plane trees one so often sees forming avenues in our provincial towns. Outside the Orchard House are two fine Wistarias, and their second crop of flowers this season is making a good display. In the rock garden Sedum spectabile atrosanguinum gives great promise of a fine show of colour in a few weeks time; clumps, measuring three feet through, are covered with flower buds. Last but not least—the Orchard House. Here Mr. Turner has a standard Peach of the variety Diamond; this tree has been growing in the open until three years ago, when it was lifted and brought inside. It is now carrying a crop of three hundred fine fruits. Such cultural perfection is in itself worthy of comment. I hope these few notes will interest your readers, especially those who live in London. *A. Donald Blaxill, Westminster.*

The Destruction of White Fly.—Although holding no brief for the firm concerned, I should like to recommend Cyanogas "G." Fumigant to those who are troubled with white-fly. It is the cheapest and most successful remedy I have ever used for the destruction of this pest. To quote one result of several: A house, 6,000 cubic feet, contained Tomatos in pots, Lilium longiflorum, Begonias, Gloxinias, Pteris, Asparagus plumosus, and small seedling Primulas; the house was closed down at 7 p.m., and at the same time Cyanogas was sprinkled on the path at the rate of one-third-of-an-ounce per 1,000 feet, or two ounces in all. Within a few minutes of closing the door the white flies could be observed falling from the Tomatos on to the plants underneath. On a close examination being made the following morning not a living white-fly could be found, but there were thousands of dead ones. No damage was done to the plants in the house. The total cost was seven pence halfpenny. A further fumigation is necessary about ten days later to destroy the flies that hatch from the eggs that survive the first fumigation. *A. O. M., Notts.*

Arum crinitum.—Sir Herbert Maxwell's remarks on the foetid odour of Arum crinitum on page 91, recalls a war-time encounter with one of these giant Arums on the Dorien front, Salonica. This plant, as nearly as I can remember, was two or three feet high, the spathe being fully a foot long and of blackish-brown colour; leaves broad and sagittate. Camping down early one day, my companion and I erected our bivouac for the night, but as the evening advanced we were conscious of a most offensive odour, which compelled us to go out and look for some gruesome relic of war. We would have looked long enough if I had not discovered the plant growing among the long grass quite near, and to make the place habitable I cut it down with a bayonet. I often saw and smelt the same Arum after that, and, strange to say, growing on the outskirts of the native graveyards, which made me regard it as the most repulsive of plants. *W. G. R.,* Bellahouston.

SOCIETIES.

SCOTTISH NATIONAL SWEET PEA, ROSE AND CARNATION.

THE annual show of this Society was held on Wednesday and Thursday of last week, when, in consequence of an augmented entry, which exceeded all previous records, all the three halls comprising the group known as St. Andrew's Halls, were required to accommodate the exhibits. A long spell of seasonable weather favoured competitors and helped to swell the attendance of the public, and in this connection it is gratifying to report that the takings showed a material increase on those of previous years. Mr. E. W. King, Coggeshall, and Mr. Robert Bolton, Halstead, were present and assisted in judging the Sweet Pea classes, while Mr. William Cuthbertson made his first public appearance on his return from a world tour. The schedule contained 125 classes, allocated as follows:—Sweet Peas, 42; Roses, 30; Carnations, 33; and decorative classes, 20.

SWEET PEAS.

Taken as a whole, the quality of the blooms was scarcely up to the average standard of previous exhibitions.

In the open section, only two collections occupying a fifteen-feet by four-feet space were staged, and the first prize went to Messrs. TORRANCE AND HOPKINS, Busby, whose group of thirty-five varieties was superior in regard to both quality and arrangement to that from Mr. HENRY HARPER, Kilmalcolm. The Busby firm, however, was defeated in the class for twenty-four vases by Mr. JOHN A. GRIGOR, Banff, whose best vases were Hawlmark Salmon Pink, Dignity, Wizard, Elegance, Wild Rose, Picture and Radiance. The twelve-vase class brought in Mr. CHARLES GLASS, Cardross, and Messrs. TORRANCE AND HOPKINS had to be content with second place.

The Novelty class is always interesting, and it resolved itself into a contest between Mr. JAMES PAUL, Killearn, and Mr. JAMES SMITH, Crawford Priory, Pitlessie, in which the former excelled with well-grown examples of Crusader, a new cerise; Mary Pickford, Wistaria, Dainty Maid, Sybil Henshaw and The Favourite, a new white.

The five gardeners' classes suffered in comparison with other sections as regards the number of entries. Mr. JAMES SMITH defeated Mr. J. A. GRIGOR in the class for twelve vases; Mr. EDWARD THOMSON, Larbert, was successful over Mr. JOHN NEAVES, Monkton, with nine vases, and Mr. J. A. GRIGOR led in the class for six vases, which included a misnamed vase of King Mauve that suggested either Mrs. Tom Jones or Blue Bird.

In the Amateur division the first prize winners were Mr. GEORGE BALLINGALL, Dumbarton (twelve vases); Mr. G. S. BLAIKIE, Dumbarton (nine vases); Mr. J. B. DIXON, Dumfries (six vases); Mr. D. A. STEWART, Balintrae (six vases); and Mr. J. G. WILLIAMSON, Whitecraigs (three vases). The latter class attracted eleven competitors and Mr. JOHN JEFFERY, Selkirk, who obtained second place, defeated ten opponents in the single vase class with a grand vase of Youth.

Mr. Bolton had the privilege of witnessing a keen contest among twelve gardeners and amateurs for special prizes offered for the best vase of Gold Crest, Ivory Picture and Peggy. Here, Mr. JOHN M. JEFFERY, a comparatively unknown competitor, excelled over experienced growers like Messrs. GLASS, SMITH and PAUL. Mr. J. G. ROBERTS, Barrhead, won Mr. Woodcock's chief prize with a trio composed of Austin Frederick, Cecily and Coral Glow, while Mr. CHARLES GLASS staged the best vase of Messrs. Burpee's blue novelty, Sky. In an entry of nineteen, the judges eventually placed Mr. ALEX. THOMSON first for a single vase of any variety.

The best Sweet Peas in the show were found in Mr. BALLINGALL's twelve vases, which not only won the Burpee Cup but gained the Special Prize for the best vase in any competition.

and the best vase of any 1925-26 novelty. A perfect vase of Magnet secured the double honour, and in an outstanding collection Mermaid, Elegance, Charming, Picture and Powerscourt were most admired. Mr. James Paul was second with a lighter twelve that contained fine blooms of Hebe, Matchless, Miss California and Royal Sovereign.

Competition was exceptionally keen in the single vase section, where the entries ranged from ten to nineteen in each class.

Roses.

The Rose section was a little disappointing, undersized flowers were numerous, and several of the lighter-coloured varieties bore traces of the bad weather on the outer petals.

An unfortunate incident occurred in connection with the premier award for the best collection of cut Roses, arranged on a space fifteen feet by four feet. The first prize was awarded to Mr. Sandy Dickson, Belfast, but as the exhibit had not been completed until long after the stipulated schedule time, Messrs. Fairley and Co., Cairneyhill, Fife, who were originally second, were advanced to equal first. This decision however, did not satisfy the latter exhibitors, who maintained that under the circumstances the Irish exhibit should have been disqualified.

Messrs. D. and W. Croll's six baskets were preferred to those of Messrs. Thomas Smith and Son, Stranraer, who found compensation in winning first prize for twelve vases. Only four seedlings not in commerce were submitted for judgment, and the chief honours went to Messrs. Dobbie and Co., who were awarded a Gold Medal and first prize for a deep yellow seedling named Mrs. Fred Howard, while Duchess of Atholl, bronzy-orange, also raised by the Edinburgh firm, came second, and received a Certificate of Merit. Messrs. T. Smith and Son were third with a shapely blush Rose.

Messrs. Adam and Craigmile, Aberdeen, excelled in the class for thirty-six blooms, and they also staged twelve excellent specimens of Mrs. Henry Bowles which secured the first place in the pink class. Messrs. Smith and Son repeated their Falkirk success in the red class with twelve even and richly-coloured specimens of Earl Haig, while Messrs. D. and W. Croll won in the white and yellow classes with Frau Karl Druschki and Mabel Morse. Messrs. Adam and Craigmile staged Mrs. Charles Lamplough in the white class and were disqualified, an experience that was also shared by Messrs. Croll, whose basket of exhibition Roses exceeded the specified size. In the latter contest Messrs. Smith prevailed with a strong collection of Capt. Kilbee Stuart.

In the gardeners' and amateurs' section, Mrs. Russell, Mearns, won the Hugh Dickson prize for six blooms for the third time and it now becomes her property, while the Silver Rose Bowl went to Mr. William Smith, Dunecht, who staged twelve blooms, which included outstanding examples of Mabel Morse, Earl Haig and Mrs. Henry Bowles. Mr. James Tullarton, Ayr, won the Turner Cup offered for the best vase of five blooms in the amateurs' class, and the Rose Bowl for twelve blooms in the same section was won by Mr. John Russell.

Carnations.

In this section, Mr. James Smith, Darvel, had eight first prizes to his credit, and the Irvine Valley Cup and the Carlow Cup were won by Mr. Alex. McMillan. Other successful competitors were Mr. A. T. Harrison, Culzean; Mr. F. R. Burnet, Kilmalcolm; Mr. William King, Galston; Mr. James Troup, Row; Mr. William Carruthers, Cardross; Messrs. Torrance and Hopkins, Mr. J. Smith, Birmingham; and Mr. James, Fullarton, the latter of whom carried off the Low and Gibson Gold Medal for a vase of Picotees.

Decorative.

The bouquets were a feature in this section. In the classes for shower bouquets, Mr. William Holmes, Helensburgh, led and he also excelled with a basket of Carnations, three vases of Sweet Peas, sprays and buttonholes of Roses and a vase of Dianthus Allwoodii. Mr. George Ballingall staged the best bowl of Sweet Peas, and Miss Smillie, Glasgow, provided the winning bowl of Carnations, and the best epergne of Sweet Peas.

Additional judges had to be called in to decide the merits of the decorated dinner tables, and the Invertrossachs Silver Cup was eventually awarded to Miss Edna Dixon, Dumfries, for a light and graceful arrangement in which Emma Wright and Sunstar Roses, with foliage of Rose species, were used to advantage. The same competitor was also successful with a bowl of Roses and a vase of mixed Sweet Peas.

Awards to Non-Competitive Exhibits.

Large Gold Medals.—To Messrs. Dobbie and Co. (Roses and Sweet Peas); to Messrs. George Mair and Sons, Prestwick (Gladioli); and to Messrs. Austin and McAslan, Glasgow (Roses).

Silver Medals.—To Messrs. M. Campbell and Sons, Blantyre (Carnations); to Mr. Robert Lawrie, Carnwath (Begonias).

Certificates of Merit.—To Messrs Low and Gibson, Crawley Down (Carnations and Gladioli); and to Messrs. Thyne and Co., Dundee.

ROYAL HORTICULTURAL.

August 10.—Although there was a small show at the meeting held on this date, the exhibits were all very interesting and of very good quality. Gladioli, Roses and herbaceous Phloxes were the chief floral features. A magnificent group of Cattleyas was shown by Baron Bruno Schröder. Fruit was represented by excellent collections of Plums and Grapes in pots; dishes of Peaches, Nectarines and a collection of Apples. Neither the Orchid Committee nor the Fruit and Vegetable Committee made any award to novelties, but the Floral Committee recommended ten Awards of Merit and selected one Dahlia for trial at Wisley.

Orchid Committee.

Present: Mr. H. T. Pitt (in the chair), Mr. Gurney Wilson (Hon. Sec.), Mr. Fred K. Sander, Mr. Arthur Dye, Mr. Henry H. Smith, Mr. J. E. Shill, Mr. Charles H. Curtis, Mr. John C. Cowan, Mr. T. Armstrong, Mr. E. R. Ashton and Mr. Stuart H. Low.

This Committee made no awards to novelties, indeed only one plant came up for judgment.

Groups.

A magnificent group of Cattleyas exhibited by Baron Bruno Schröder (gr. Mr. J. E. Shill), The Dell Park, Englefield Green, Surrey, was the outstanding feature of the show. This superb display occupied a space forty feet by six feet, and contained about one hundred specimens and an aggregate of not fewer than five hundred flowers. Every plant was a perfect example of skilful cultivation and carried from one to four spikes of beautiful flowers. The larger part of the Cattleyas consisted of lovely forms of the charming Cattleya Hardyana alba, and in one instance a plant carried one spike of six large blooms—an unusual number. The central grouping was of C. Harold (gigas × Gaskelliana) while here and there were capital examples of C. Prince of Wales. In the centre foreground were several yellow or cream-coloured hybrids and, nearby, a beautiful Hardyana-gigas cross with wide, white sepals and petals and a royal purple lip and pale yellow throat. Also, in this group were several large specimens of Cypripedium Maudiae, one of which carried thirty of its stately flowers. Altogether this was a wonderful exhibit upon which we congratulate owner and grower to whom respectively the Committee recommend a Gold Medal and a Silver-gilt Lindley Medal.

Messrs. Sanders showed Cypripedium niveum, Dendrobium Regium, the "blue' D. Victoria regina, and D. atroviolacea, Disa grandiflora, Paphinia cristata, Coelogyne Massangeana, Lycaste Deppei, L. leucoxantha, Odontoglossum grande, and other interesting Orchids in a moderate-sized group.

Messrs. Stuart Low and Co.'s small exhibit contained attractive plants of Cattleya suavior var. Aquinae, Laelio-Cattleya Aeneus, with bright salmon-coloured sepals and petals and dark purple lip; L.-C. Ortega var. Ruby, richly hued; and L.-C. Jacquinetta, with broad purple petals and large, dark, purple lip.

A spike of the handsome hybrid Vanda Marguerite Maron (suavis × teres) was sent from the Hague by Mr. van Deventer; this was a very fine, spotted, and richly coloured form, and a special vote of thanks was passed to the sender.

Floral Committee.

Present: Section A.—Mr. H. B. May (in the chair), Mr. Arthur Turner, Mr. H. J. Jones, Mr. W. P. Thomson, Lady Beatrix Stanley, Mr. J. M. Bridgeford, Mr. W. Howe, Mr. David Ingamells, Mr. J. B. Riding, Mr. W. B. Gingell, Mr. F. Streeter, Mr. D. B. Crane, Mrs. Helen Lindsay Smith and Mr. Chas. E. Pearson.

Section B.—Mr. Gerald W. E. Loder (in the chair), Mr. Jas. Hudson, Mr. G. Reuthe, Mr. G. Yeld, Mr. Chas. T. Musgrave, Mr. R. D. Trotter, Sir Wm. Lawrence, Mr. W. B. Cranfield, Mr. Amos Perry, Mr. T. Hay and Mr. E. A. Bowles.

Awards of Merit.

Achimene Dwarf Pink.—A splendid little plant was shown. It is of dwarf, spreading habit and bears an abundance of medium-sized, bright rose-pink flowers, which have a few rosy carmine spots around the tube. Shown by Messrs. Sutton and Sons.

Cupressus tamaricifolia, Tilgate variety.—There does not seem to be any authority for this specific name. A sturdy, compact little tree was shown which has much the general characteristics of a dwarf variety of Cupressus Lawsoniana. It is of spreading habit and is well furnished with broad branchlets. The foliage on the outer portions of the branchlets is a bright green colour while nearer the stems it is often tipped with silver. It appears to be a desirable Conifer for the rock garden. Shown by Mr. H. Hemsley.

Gladiolus Kelway's Defiance.—Several magnificent spikes, each bearing six to seven very large, fully open flowers, were shown. The general colour is a vivid cardinal, lightly shaded with crimson. The three inner segments have a narrow white line in the centre and a fascinating rose-pink flushing on white ground. Shown by Messrs. Kelway and Son.

Phlox Annie Laurie.—This was perhaps the most striking of the five varieties which received awards. It is of vigorous habit and has large heads of rich, deep salmon-pink colour with a narrow rosy-purple zone and faint white rays.

P. Enchantment.—The heads of flower are rather more compact and a trifle smaller than those of the foregoing. The colour is a pale salmon-pink with a definite rosy-purple eye.

P. Hon. Mildred Gibbs.—A vigorous variety with good trusses of royal purple flowers which have short, irregular white rays.

P. Mrs. Edwin Beckett.—A vigorous plant with large trusses of pale lilac flowers which have a rose-pink zone.

P. Vicary's Victory.—A plant of medium size and vigour, bearing spreading trusses of bright rose-pink flowers with irregular white rays. All the Phloxes were shown by the Hon. Vicary Gibbs, Aldenham House, Elstree.

Satyrium coriifolium.—The spikes of flowers were shown as S. aureum, but it seems evident that S. coriifolium is the correct name. It was introduced from the Cape about one hundred years ago. The erect, fleshy spikes are about twelve inches in height, and spring from stout coriaceous, stem-clasping leaves, which, like the bracts and tuft at the apex, are often margined with rosy-purple. The substantial flowers are of golden-yellow colour flushed with flaming orange on the hooded, upper segment. This terrestrial Orchid does not appear to be quite hardy, but to require the protection of a frame. Shown by Mr. Amos Perry.

Sphaeralcea Fendleri var. Hascombe Orange.—Mr. Charles T. Musgrave informed us that the shrub shown under the above name makes a spreading bush, measuring about four feet each way, and that he crossed S. Fendleri with S. campanulacea, and then crossed the hybrid so raised with S. Fendleri. The result is a pretty plant resembling S. Fendleri in its habit and grey foliage. The flowers are larger than those of either of the parents, all of which were on view. They are cup-shaped like those of S. campanulacea, of bright orange colour and have a faint rosy zone. The original plant is over four feet high and as much through. Shown by Mr. Charles T. Musgrave, Godalming.

Dahlia for Trial at Wisley.

Capel Star.—A graceful Star Dahlia of soft pink colour, with a pale primrose-yellow centre. Shown by Messrs. J. Cheal and Sons.

Groups.

Gladioli were the chief floral feature of the show, and these were shown extensively by several exhibitors. Just inside the entrance Messrs. R. H. Bath, Ltd., had a large group which contained good spikes of both the large-flowered type and Primulinus hybrids. Many of the latter were very beautiful. The chief were: Souvenir, yellow; La Dornoise, orange, heavily flushed with rose; Salmon Beauty, Maiden's Blush, La Lys, cream; and Attalia, orange-scarlet. The principal large-flowered varieties were: Gypsy Queen, crimson flushed with maroon; Sapho, dull puce, lined with heliotrope; Frau Dr. Hauff, light crimson flushings; and Shiela, salmon, with a yellow blotch on the base of the petals. Mr. Alfred Edwards arranged a smaller collection of Primulinus hybrids very attractively in ornamental baskets.

On a large wall space near the gallery, Messrs. Kelway and Son displayed many of their newest hybrid Gladioli and standard varieties. Amongst the large-flowered sorts we especially noted Vestalin, a large flower with pretty margins, and of rich rose-pink colour, attractively spotted at the base; Delightful is a beautiful rich salmon of large size; Duke of Richmond, rose, with large white spot; Kelway's Masterpiece, crimson, flushed with rose; Queen Mary, white, with large crimson blotch, margined with yellow; Palestine, yellow with crimson blotch; Goliath, rosy-puce; and Field Mouse, puce, flushed with crimson. Their graceful Primulinus varieties included Golden Girl, Lady Mostyn, Early Morn and Rev. J. Stubbs. Another attractive collection, shown by Messrs. H. Langridge and Co., included, amongst the large-flowered sorts, Brilliant, Duchess of York, Mrs. Francis King and Crimson Glow, while amongst the Primulinus hybrids were Psyche, of bright orange-scarlet colour, and Tea Rose.

On a large floor space, Mr. H. J. Jones set out a great many well-grown plants of herbaceous Phloxes in round baskets. Amongst the many desirable varieties we especially noted Mrs. Rutgers, lilac; C. Edwards, salmon-pink; Exquisite, white with rosy eye; Australia, purple; Dr. Charcot, blue; Jules Sandeau, pink; and Mrs. Scholton, rose-cerise.

Mr. Amos Perry again staged various interesting aquatic plants, largely of the floating and bog species, with small pans containing large flowers of various Nymphaeas, particularly N. Gladstoniana, N. Marliacea rosea, and N. Marliacea carnea. He also had vases of Watsonias, Kniphofias, Asclepias tuberosa and Lilium Henryi. The Misses Hopkins made an interesting rock garden.

Another selection of their Great Ryburgh strain of Sidalceas was shown by Messrs. Stark and Son. This included Hiawatha, deep rose with white eye; Ruby Gem, and unnamed seedlings of merit. Amongst his collection of uncommon shrubs, Mr. G. Reuthe included several well-flowered sprays of Eucryphias, Diplacus glutinosus coccinea, Honeysuckles and Heathers.

A large vase of Lavatera Olbia rosea was shown by Messrs. B. Ladhams, Ltd., with equally large quantities of Coreopsis auriculata superba, Lythrum virgatum, Lobelia Tupa and hybrids of Lobelia cardinalis. Messrs. M. Prichard and Sons showed hardy Crinums, Phloxes, Gladioli, dwarf Campanulas, Calandrina umbellata and Pratia armensis, with other dwarf alpines.

An excellent collection of Violas in pans of wet sand, shown by Mr. William Yandell, included Master Banks, yellow; David Beatt, almost jet black; Malcolm Milner, primrose yellow with Picotee edging; and Moseley Sunrise, yellow.

A large collection of Roses was staged by the Mr. J. H. Pemberton, who had masses of Margaret Dickson Hamill, Anne, Mermaid, The General and Los Angeles. Messrs. F. Cant and Co. displayed such varieties as Maud Cuming, Christine, Charm and Miriam; while Messers. D. Prior and Sons included good vases of Feu Joseph Looymans, Little Juliet, Golden Emblem and Gooiland Beauty in their collection of Roses. Messrs. Allwood Bros. and Mr. C. Engelmann exhibited their customary collections of good Carnations. Mr. H. Hemsley showed seedling Sidalceas and a small collection of Dahlia blooms; while Messrs. J. Cheal and Sons had a larger group of Dahlias, principally of the Star, Miniature Paeony and Single types.

Fruit and Vegetable Committee.

Present: Mr. C. G. A. Nix (in the chair), Mr. W. Poupart, Mr. A. Poupart, Mr. H. S. Rivers, Mr. T. Pateman, Mr. W. F. Giles, Mr. E. Beckett, Mr. W. H. Divers, Mr. E. A. Bunyard and Mr. A. N. Rawes (Secretary).

Groups.

The Silver Bunyard Medal and a card of cultural commendation were awarded to the Rt. Hon. Lord Leconfield (gr. Mr. F. Streeter), Petworth Park, Sussex, for a collection of ripe Peaches, Nectarines and Apricots of outstanding merit. The chief Peaches were Dymond, Dr. Hogg and Peregrine, while the Nectarines were two splendid dishes of Early Rivers, and the Apricots were Moor Park, Shipleys and Kaisha.

A group of splendidly grown pot trees of Plums carrying heavy crops of fruit was exhibited by Messrs. George Bunyard and Co. The chief varieties were Jeffersons, Kirke's Blue, Count Althann's Gage, Archduke, Abundance, Diamond and Gordon Castle. The group also included fruiting trees of John Downie and Dartmouth Crabs, and a few baskets of ripe Gooseberries.

Messrs. Lane's Nurseries Ltd., contributed many superb pot vines each carrying ten to twelve large, well-coloured bunches of grapes. The chief varieties were Alicante, Black Hamburgh, Madresfield Court, Mrs. Prince and Foster's Seedling. Messrs. S. Spooner and Sons staged a neat collection of Apples, including Lady Sudeley, Potts's Seedling, Goodenough's Nonsuch, Williams's Favourite, Red Victoria and Worcester Pearmain.

ROYAL HORTICULTURAL OF IRELAND.

The summer show, held in conjunction with the Royal Dublin Society's Horse Show at Ballsbridge, Dublin, on August 5 and 6, proved a highly successful and satisfactory function; and, excepting Roses, which took on a tired look towards the end, flowers, plants and exhibits generally, bravely withstood the test of summer heat in the spacious hall devoted to the show which was honoured by a visit from the Governor-General, accompanied by the Maharajah of Alwar on the opening day, and subsequently by several thousand visitors.

Trade exhibits, included spacious model gardens contributed by Messrs. W. Drummond and Sons, Ltd., Dublin, and Stirling, N.B., tastefully laid out in rock beds, planted with alpines and hardy flowers; and an old style formal garden, with flagged walks and fine beds of Antirrhinums all enclosed in trim, closely-set Box trees, contributed by Sir James W. Mackey, Ltd., Dublin, these being awarded Gold Medals. A Gold Medal was also awarded to Mr. S. Gilthorpe, Monkstown House Nurseries, Co. Dublin, for a superb stand of Gladioli.

Trade competitive classes found Messrs. S. McGredy and Son the only entrant for a large group of Roses, with an exquisitely set up collection which won the £15 prize. The same firm led with six baskets, distinct, while the Donard Nursery Co., Newcastle, Co. Down, won the Maloney Challenge Cup with forty-eight Roses, and first prizes for twelve Roses, distinct, and for twelve Roses not exhibited prior to 1904.

For a group of foliage, flowering and decorative plants arranged for effect on a floor space of two hundred square feet, the Hon. A. E. Guinness, Glenmaroon, Co. Dublin (gr. Mr. W. Stevens) was placed first, without a competitor, with an effective display dominated by a fine specimen Kentia. In the class for hardy, ornamental, flowering shrubs and cut sprays, competing for the President's Cup, and cash prizes, on a similar floor space, the Donard Nursery Co. had an easy win with a graceful group, including towering sprays of Sparaxis, which made a distinctive object in the hall; Mrs. Raymond Stephenson, Cranford, Dublin (gr. Mr. M. Buggle), won second prize.

For hardy flowers shown in vases on a table space twenty-four feet by six feet, Capt. Riall, D.L., Old Conna, Bray (gr. Mr. T. Webster), excelled; with F. V. Westby, D.L., Roebuck Castle, Dundrum (gr. Mr. F. Simmons), second, and Major Kelly, Montrose, Donnybrook (gr. Mr. J. McDermott), third. In a similar class but with a space of twelve feet by six feet, the Rt. Rev. and Hon. B. J. Plunket, St. Anne's, Clontarf (gr. Mr. P. Reid) was placed first; second, Miss S. Bird, Churchtown House, Dundrum (gr. Mr. Smith); third, J. D. La Touche, Esq., Kiltymon, Co. Wicklow (gr. Mr. J. Gilleran). The best twelve vases of hardy flowers came from C. Wisdom Hely, Esq., Oakland, Rathgar (gr. Mr. J. H. Orr), Madame Fottrell, Richelieu, Sydney Parade (gr. Mr. W. Taylor), and Miss Darley, Violet Hill, Bray (gr. Mr. J. Murphy), following in the order named.

Sweet Peas were not a strong feature, Mr. W. H. Lee, Powerscourt Gardens, Co. Wicklow, being the only entrant in the class for a collection staged for effect on a table space sixteen feet by four feet. In the class for eighteen bunches, distinct, Mrs. Alfred West, Kilcrony, Bray (gr. Mr. C. Coster), led; Gordon Joyce, Esq., Woodview, Blackrock (gr. Mr. C. Dunne) second; while Miss Darley excelled for twelve bunches; and H. J. White, Esq., Durrow, Queen's Co., A. E. McNulty, Esq., and Mrs. Foster were the winners in the class for six bunches. In other floral classes, including Dahlias, Begonias, Antirrhinums, annuals, Carnations and Montbretias, competition was good and with rambler Roses (keenly contested) a feature in the amateurs' section. Gladioli were finely shown in these classes, and notably so in competition for the Westby Challenge Cup, this year won outright by Mrs. West, with eighteen named varieties, the same competitor being first with nine vases of Primulinus sorts, with Major Gordon Drummond, D.S.O., second; Mrs. West also excelled for the collection staged on a space twelve feet by four feet.

A striking feature of the show, and a fine foil to the wealth of bloom, was the collection of British Ferns, comprising fifty specimen plants of the rarest species and their varieties, contributed by the Rev. Canon Kingsmill Moore, D.D., from his unique collection at Cedar Mount, Dundrum, for which the Society's Large Silver-gilt Medal was unanimously awarded; Dr. Moore also won the Bronze Medal presented by *Gardening Illustrated* in a competition with six specimens. It was generally conceded that Dr. Moore's honorary exhibit was the finest of its kind yet seen at a Dublin show.

Thirty-four classes for fruit were generally well-filled, Melons being better in quantity and quality than experienced in Dublin for some years past, J. O'Neil Donnellan, Esq., Windsor House, Monkstown (gr. Mr. D. Colohan), gaining firsts for both green and scarlet fleshed, but the glory of Grape growing and showing seems practically to have departed from Irish gardens, although good bunches of Black Hamburgh were exhibited by Major Kelly, Mr. Wisdom Hely and Capt. Daly. A notable feature among small fruits was Mr. H. E. Joly's new seedling Golden Wonder Gooseberry, far and away first in the class for yellow berries, and a further exhibit of fruit-laden branches received the award of a Silver Medal.

Twenty-six classes for vegetables found those for single dishes well-filled, although only one competitor entered for the champion collection shown on a space of twelve feet by four feet, and for that we congratulate and compliment the winner, Mr. J. DAWSON (gr. to Mrs. Bernard, Belfield, Donnybrook). Smaller collections of twelve kinds and six kinds found winners in the Hon. A. E. GUINNESS, Miss DARLEY, Messrs. GORDON JOYCE, E. CLIVE BROOKS and J. TEELING. Giant Stride, the new dwarf Pea, shown by Messrs. JAMES CARTER AND CO.'s representative, both on the haulm and gathered pods, evoked considerable interest.

Special awards of Silver-gilt Medals, over and above those mentioned, were made to Messrs. HOGG AND ROBERTSON, LTD., Dublin; to Messrs. CHARLES RAMSAY AND SON, Ballsbridge, and to the DUBLIN NURSERY CO., Blackrock; and Silver Medals to Messrs. PENNICK AND CO., Delgany, Co. Wicklow, for a well-staged collection of plants and flowers, and to Miss LAYNG, of Cork, for a beautifully worked out miniature model garden. Bronze Medals were awarded to Major FRENCH, Rosemount, Booterstown, for a collection of vegetables, and of Sweet Peas; to Miss WYNNE, Avoca, Co. Wicklow, and to Miss RYAN, Holyrood Park, Dublin, for miniature alpine rock gardens.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

THURSDAY, JULY 15.—*Committee Present*: J. B. Adamson, Esq. (in the chair), Messrs. R. Ashworth, A. Burns, A. Coningsby, J. Evans, A. Keeling, D. McLeod, E. W. Thompson and H. Arthur (Secretary).

FIRST CLASS CERTIFICATE.

Odontoglossum Eros magnificum (*Othello* × *President Poincaire*).—From Mrs. P. SMITH.

AWARDS OF MERIT.

Miltonia Hyeana var. King Ethelwulf; *M. Constance var. secundus*.—From Mrs. BRUCE and Miss WRIGLEY.

Odontoglossum Beauté Celeste, Adamson's variety.—From J. B. ADAMSON, Esq.

GROUP.

J. B. ADAMSON, Esq., Blackpool (gr. Mr. J. Howes), staged a group to which a Large Silver-gilt Medal was awarded.

KINGSWALDEN HORTICULTURAL.

THERE was a wonderful display of flowers and vegetables at the annual show, which was again favoured with fine weather, on Wednesday, August 4, at which some 3,000 people attended. The grounds of Major J. F. Harrison's estate were thrown open to the public, and it was quite evident from the crowds who visited them that this kindness was much appreciated. There was a substantial increase in the number of show entries, the total being 653.

The exhibits were of a very high order. In addition to honorary exhibits by Major Harrison (gr. Mr. A. J. Hartless) of fruit and vegetables, there were good displays of Roses by Messrs. HARKNESS and Messrs. WHEELER; Gladioli by Messrs. KITCHENER; herbaceous and cut flowers by Messrs. W. CUTBUSH AND SON, and Messrs. R. CANNON, of Hitchin. There was also an interesting exhibit, with diagrams, appertaining to poultry, and an apiary section, both contributed by the Hertfordshire County Council.

Apart from the educational features, there were other attractions in sports and side shows, which were additional to those of other years.

It is evident that this horticultural display is becoming more widely known as judged by the long distances many visitors had come.

Obituary.

Mrs. Hamilton Fellows.—The tidings of the death of Mrs. Hamilton Fellows were received in Guildford with the deepest regret. When the Guildford Association paid its last visit to Tangley Park on June 12, Mrs. Hamilton Fellows could not be present to receive her guests. She was ill in London. From that illness she never recovered and never again saw the beauty of the Surrey garden she loved so well. Pneumonia supervened, to which she succumbed on Tuesday, August 3, at the age of fifty-two. The interment took place at Worplesdon Churchyard on Saturday last, when a very large company of relatives, friends, the indoor and outdoor staff, and many others gathered at the graveside to pay their last respects. The grave had been made a place of beauty by loving hands, and was lined with evergreens, Ferns, leaves of Caladiums, Lilies, Roses and many blooms of Mrs. Hamilton Fellows Carnation. The numerous wreaths gave another indication of the great hold the deceased lady had upon the affections of a wide circle. The wreath from the Guildford Gardeners' was largely composed of Carnations, while another, from the Guildford Chrysanthemum Society, was equally beautiful. Both these associations and adjacent village societies have lost one of their best friends, as Mrs. Hamilton Fellows was a garden lover, and a generous patron of the societies named. Her keen interest in horticulture was an inspiration to others. She derived great pleasure in receiving visits from horticultural societies in the neighbourhood, and had specially invited the Guildford Gardeners' to visit Tangley Park again and again to see the pageant of spring and summer as revealed in her garden. Her generosity assumed many forms, one of which was the presentation of a good-sized house to the Guildford Town authorities to be used as a school clinic.

Mrs. H. Joy.—Many gardeners will regret to learn that Mr. H. Joy, Potters Bar, the southern representative of Messrs. Wm. Wood and Son, Ltd., has suffered a heavy bereavement in the loss of his wife, who succumbed to a heart attack on Friday, August 6, following a long illness.

Henry Ruck.—Many old Kewites will deeply regret to learn of the sudden death of Henry Ruck who was Office Orderly to three Directors of the Royal Botanic Gardens, Kew. He was sixty-eight years of age and had been in the service of Kew for just over thirty-three years when he had to retire from his position under the age limit, but was almost immediately re-engaged for lighter duties under the Office of Works. He had been in his usual good health up to the morning of August Bank Holiday when he became seriously ill and died while on duty. Mr. Ruck's unfailing good nature and unassuming disposition endeared him to a long succession of Kewites. As a special mark of his esteem the present Director, Dr. A. W. Hill, attended the funeral at Richmond Cemetery on August 6, when there was a very large gathering of friends and the Kew staff. His son, Mr. Edward Ruck, is Assistant Director of Agriculture at Kampala, Uganda, and another son, Mr. Harry Ruck, is the official packer at Kew.

W. Wallace.—The death of the only son of Mr. and Mrs. W. E. Wallace, of Eaton Bray, Dunstable, is a sad loss to the commercial horticultural world and a severe blow to his father and mother, and the widow and two daughters who mourn the sudden and untimely passing of one who was in the prime of life and held in very high regard both in Eaton Bray and Covent Garden. Mr. W. Wallace was recognised as the cleverest of the several clever growers who cultivate perpetual-flowering Carnations for market. Always studiously inclined, he was never happier than when at work with his microscope. To a by no means small scientific knowledge he added a life-long practical experience as a cultivator and the combination placed him at the head of his compeers. For many years past he had control of the Carnation growing and marketing side of the business so pluckily begun and successfully carried on by his father, the veteran and popular Mr. W. E. Wallace. Close application to business and a not very robust constitution prevented the late Mr. W. Wallace from coming frequently before the public, and he was seldom seen in London except at the meetings of the British Carnation Society. None the less, however, he was widely known, and in his own particular sphere held an unique position. He died in his sleep. Our readers will join with us in sympathy with the family so sadly and suddenly bereaved.

ANSWERS TO CORRESPONDENTS.

CORRECTION.—Under D. pendulum, p. 109, you state that the importation of this species was from *Bermuda*, although I wrote *Burma* or *Burmah* in the manuscript. Dendrobiums of this class could not come from Bermuda. But it is evident that it was an error, probably the printers, so a long explanation is not necessary. *J. O'B.*

CELERY DISEASED.—*C. F. C.* Your Celery is attacked by Septoria apii, a disease which may be controlled by sterilising the seed with hydrogen peroxide. When the disease appears in the seed bed the plants should be sprayed with Bordeaux mixture so soon as they appear above ground, and once or twice a week until transplanted. If the disease develops in the garden the plants should be sprayed with Bordeaux mixture at ten-day intervals.

FLOWER SHOWS.—*F. E. C., Shoreham.* The dates of flower shows and other events given in our annual Almanac are correct so far as they were known in January, but a great many events are not fixed so early in the year, and some dates are changed later. We keep a typed list of exhibitions, adding fresh ones and making corrections each week, as the schedules come to hand, and can supply copies of this list at 2s. 7d. each, post free.

NAMES OF FRUITS.—*J. N. M.* The Peach sent for naming is Hale's Early, an early, round, American variety of good flavour; dark crimson when fully exposed to the sun, flesh pale yellow and scarcely coloured round the stone. A good bearer and a useful hardy Peach for south or west walls.

NAMES OF PLANTS.—*R. L.* The Cistuses were all decayed beyond recognition when they reached us. *W. H. M.* Justicia carnea. *J. C. B.* Probably Iris japonica. *B.* The Campanula is one of the numerous forms that centre round C. rotundifolia, and corresponds very closely to C. rotundifolia var. major of Decandolle. *A. B. H.* 1, Buddleia variabilis var. nanhoensis; 2, Gentiana cruciata; 3, Phormium Cookianum; 4, Bahia lanata (yellow flower); 5, Cistus crispus; 6, Escallonia exoniensis (white); 7, Escallonia rubra (pink). *Glentuchan.* 2, Lychnis Viscaria.

PHLOX STEMS DISEASED.—*F. B. K.* Your plants appear to be suffering from an attack of the Phlox stem canker, which frequently appears on the stems just above the ground. In due course the leaves turn yellow and the stems break near the base. The disease is so deeply seated that it is not possible to save a diseased stem. All diseased growths should be cut out, removed and burnt to prevent the spread of the trouble.

Communications Received.—C. B.—G. F.—C. S.—J. B. P.—E. E.—M. E. W.—W. K.—H. P.—A. D.—E. D. B.—F. J.—F. C. P.—J. R. C.—H. C.—R. F.

MARKETS.

COVENT GARDEN, Tuesday, August 10, 1926.

Plants in Pots, etc.; Average Wholesale Prices.

(All 48's except where otherwise stated).

	s. d. s. d.
Adiantum cuneatum per doz.	10 0–12 0
—elegans	12 0–15 0
Aralia Sieboldii	9 0–10 0
Araucarias, per doz.	30 0 42 0
Asparagus plumosus	12 0–18 0
—Sprengeri	12 0–18 0
Aspidistra, green	36 0–60 0
Asplenium, doz.	12 0–18 0
—32's	24 0–30 0
—nidus	12 0–15 0
Cacti, per tray —12's, 15's	5 0– 7 0
Crassulas, 48's, per doz.	24 0–30 0
Crotons, doz.	30 0–45 0
Cyrtomium	10 0–25 0
Fuchsias, 48's, per doz.	12 0–18 0
Heliotrope 48's per doz.	12 0–15 0

	s. d. s. d.
Hydrangeas, pink, 48's, per doz.	24 0–30 0
—white, 48's per doz.	24 0–70 0
—blue, 48's per doz.	24 0–36 0
Ivy Pelargonium, 48's, per doz.	15 0–18 0
—60's per doz.	9 0–12 0
Lilium longiflorum (Harrissii) 48's, 32's per doz.	21 0–30 0
Marguerites, 48's per doz.	18 0–21 0
Nephrolepsis in variety	12 0–18 0
—32's	24 0–36 0
Palms, Kentia	30 0–48 0
—60's	15 0–18 0
Pteris, in variety	10 0–15 0
—large, 60's	5 0– 6 0
—small	4 0– 5 0
—72's, per tray of 15's	2 6– 3 0
Roses, Polyantha 48's, per doz.	24 0–30 0

Cut Flowers, etc.: Average Wholesale Prices,

	s. d. s. d.
Achillea The Pearl per doz. bun.	3 0—4 0
Adiantum decorum, doz. bun.	8 0–10 0
cuneatum, per doz. bun.	6 0—8 0
Asparagus plumosus, per bun., long trails, 6's	2 0—3 0
med. sprays	1 6—2 6
short	0 9—1 3
—Sprengeri, bun. long sprays	1 6—2 0
med. „	1 0—1 6
short „	0 4—1 0
Asters, white per doz. bun.	3 0—5 0
— coloured, per doz. bun.	3 0—5 0
Carnations, per doz. blooms	1 0—2 6
Chrysanthemums, white, per doz.	2 6– 3 6
—bronze „	2 0—2 6
—bronze per doz. bun.	9 0–12 6
—yellow, per doz. blooms	3 0—4 0
—yellow, per doz. bun.	8 0–10 0
Clarkia, per doz. bun.	4 0—5 0
Coreopsis, per doz. bun.	1 0—1 6
Cornflower, pink, per doz. bun.	1 0—1 6
—blue, per doz. bun.	1 3—1 6
Croton, leaves per doz.	1 9—2 6
Daisy, Giant White per doz. bun.	2 6—3 0
Fern, French, per doz. bun.	10 0–12 0
Forget-me-not, per doz. bun.	6 0—8 0
Gaillardias, per doz. bun.	2 6—3 0
Gardenias, 12's, 18's per box	6 0—9 0
Gladiolus, The Bride, per doz. bun.	5 0—6 0
—primulinus, 6's, per doz. bun.	4 0—5 0
—various Giant varieties, per doz. spikes	1 0—2 6
Godetia, per doz. bun.	4 0—5 0

	s. d. s. d.
Gypsophila elegans	5 0—6 0
—paniculata	6 0—9 0
Heather, white, per doz. bun.	10 0–12 0
pink, per doz. bun.	9 0–12 0
Lapageria, white, per doz. blooms	2 6—3 6
Lilium longiflorum long, per doz.	1 6—2 0
Lilium speciosum rubrum, long, per doz. blooms	2 6—3 0
—short doz. blooms	1 0—1 6
—lancifolium album, per doz. blooms	1 0—2 6
Lily-of-the-Valley, per doz. bun.	18 0–30 0
Montbretia, per doz. bun.	4 0—6 0
Orchids, per doz.	
—Cattleyas	30 0–36 0
Roses, per doz. blooms—	
—Madame Abel Chatenay	1 6—2 0
—Molly Sharman Crawford	1 6—2 6
—Richmond	1 6—2 6
—Columbia	2 0—2 6
—Golden Ophelia	1 6—2 6
—Sunburst	1 6—2 6
—Mrs. Aaron Ward	1 6—2 0
—Madame Butterfly	2 0—3 0
Scabiosa caucasica, per doz. bun.	4 0—5 0
Smilax, per doz. trails	4 0—5 0
Statice latifolia, per doz. bun.	10 0–12 0
—sinuata per doz. bun.	4 0—6 0
—Suworowii	6 0—9 0
Stephanotis, per 72 pips	3 0—3 6
Stock, double white, per doz. bun.	4 0—6 0
Sultan, white per doz. bun.	3 0—6 0
—yellow, per doz. bun.	3 0—6 0
—mauve, per doz. bun.	3 0—6 0
Sweet Peas, per doz. bun.	4 0—9 0
Violas	1 0—1 6

REMARKS.—In this department supplies have been very heavy and trade somewhat slack after the holidays. Giant Gladioli are in the finest condition received this season, and a fine selection of various colours is available, but the prices received during the past week cannot be very encouraging to growers, owing to the very heavy supplies. Chrysanthemums are becoming more numerous and gradually improving in quality, the best disbudded blooms on offer are those of Debutante, Sanctity (white), Mrs. J. Pearson (bronze), and Mercedes (yellow). The best sorts in sprays are Horace Martin, Mrs. J. Pearson and Verona; there is a small amount of Roi des Blancs, but of poor quality. There is an ample supply of white and coloured Asters, also Dahlias, and prices have been further reduced.

Fruit Average: Wholesale Prices.

	s. d. s. d.
Apples, English—	
—Beauty of Bath, per ½ bushel	4 0–12 0
—Gladstone, per ½ bushel	2 6—5 0
—Grenadier	3 0—5 0
—Early Victoria, per ½ bushel	3 0—8 0
—Derby, per ½ bushel	3 0—8 0
—Australasian Sturmers	12 0–16 0
—Granny Smith	30 0–35 0
—Statesman	9 0–10 0
—Californian Gravensteins	— 14 0
Apples, Italian, per box	10 0–12 0
Bananas	14 0–22 6
Black Currants—	
—English, per lb.	0 9—1 0
Figs, forced, per doz.	4 0–10 0
Gages, Spanish, per ½ sieve	8 0–18 0
—French	3 6—5 0
Gooseberries—	
—specials	12 0–18 0
—others	4 0–10 0
Grape Fruit	50 0–52 6
Grapes, English Black Ham-	
—burgh per lb.	1 0—2 6
—Canon Hall	3 0—7 0
—Gros Colmar	2 0—3 0
—Alicante	1 6—2 6
—Muscat	2 6—6 0

	s. d. s. d.
Lemons, Messina, per case	15 0–20 0
—Naples, box	15 0–20 0
Melons—	
—Forced Guernsey special	2 0—3 6
—Canteloup	2 0—6 0
—others	2 0—4 0
Oranges—	
—Californian	20 0–22 0
Peaches, Belgian, per doz.	3 0—6 0
—English, per doz.	4 0–12 0
—Italian, per tray	3 0—5 0
Pines	2 0—4 0
Plums, English—	
—Early Rivers, per ½ sieve	4 0—6 0
—Czar, per ½ sieve	6 0—8 0
—Orleans	7 0—8 0
—Green Victorias	4 0—5 0
Plums, Spanish, per crate	5 0—8 0
—French	4 0—6 0
—French, per ½ sieve	4 0—6 0
—Royal	6 0—9 0
Raspberries—	
—Special dessert, per lb.	1 3—1 6
—per 4 lb. chips	3 0—4 0

Vegetables: Average Wholesale Prices.

	s. d. s. d.
Beans—	
—Evesham, French	0 2½–0 3
—Runner	0 1½–0 2
Beets, per cwt.	6 0—8 0
Cabbage, per doz.	1 6—2 0
Carrots, new, per doz. bundles	2 0—2 6
Cauliflowers, per doz.	2 0—4 0
Cucumbers, per doz.	3 6—5 0
—Flats	12 0–16 0
Horseradish, per bundle	1 6—2 0
Lettuce, round, per doz.	0 9—1 6
Marrows—	
—per doz.	1 6—2 0
Mint	1 6—2 0
Mushrooms,	
—cups	2 0—3 0
—Broilers	1 0—2 0

	s. d. s. d.
Onions—	
—Valencia	7 0—9 0
Parsnips, per cwt.	5 0—6 0
Peas, English, per bushel	2 0—5 0
Potatos—	
—King Edward per cwt.	5 0—6 0
—others	4 0—4 6
Spinach, per bushel	2 6—3 6
Tomatos—	
—English, pink	4 0—6 0
—pink and white	4 6—6 6
—blue	3 6—4 0
—white	3 6—4 0
—Guernsey	4 0—5 0
Turnips, per cwt.	5 0—7 0
Turnip Tops, per bag	3 6—4 0

REMARKS.—Business has been moderate in volume, quantities generally not being large. English Apples, consisting mainly of Mr. Gladstone, Beauty of Bath, Grenadier and Early Victoria, are a good trade but supplies are poor. Australasian Apples are now practically finished for the season, but Apples are now arriving from France, Italy and mid-Europe, as well as some from California. Considering that there are fairly large arrivals of Plums and Gages from the Continent, English Early Rivers, Czars and Orleans are selling well. English Tomatos are not plentiful and after a slight improvement in price level, conditions are now slightly easier. Cucumbers show little or no variation in either demand or supply and figures are steady. A few English Pears have appeared on the market but have not sold well against heavy supplies from France. The Grape trade is better, probably due to a reduction in arrivals from Belgium. Peaches and Nectarines continue to sell well. The best Figs are a firm trade, but Melons are quoted lower. The supplies of good Mushrooms are slightly below requirements. Marrows and Beans are abundant and cheap. The Potato trade is poor.

GLASGOW.

Although prices have not materially changed except in one or two products, the markets were in a more cheerful condition during the past week, the influence of a sharp recovery in the value of Tomatos to 9d. an 10d. per lb., representing a gain of 50% on the week. Guernsey fruits were worth 6d. Lanarkshire Strawberries of high quality made up to 1/6 per lb., and preserving grades averaged 6d. Gooseberries were very plentiful at 3/- to 4/- per half-bushel; Black Currants, firm at 11d. to 1/4; Red Currants, 5d. to 6d.; Raspberries, 10d. to 1/-; Cherry Plums, 8d. per package; Californian Plums, 22/- to 24/- per tray; Spanish Gages, 11/- to 18/-; Melons, 14/- to 16/- per case; American Peaches, 10/- to 12/- per crate; Californian Bartlett Pears, 25/- to 27/-; and Californian Oranges, 26/- to 28/- per case. First arrivals of Gravenstein Apples from the United States made 15/- per case.

The cut flower market continues quiet. Gladioli are coming in more freely and loose spikes made 1/- to 2/- per dozen, and specials, 2/- to 4/-. The Chrysanthemum season was inaugurated by moderate consignments of disbudded Countess, which sold at 4/- to 6/- per dozen and small specimens of Polly and Holmes' White at 3d. to 4½d. Sweet Peas ranged from 1d. to 3d. per bunch, but the latter constituted the greater part of the business. Carnations are cheap at 1/- to 1/9 per dozen; Richmond Roses 2/- and J. C. Mensing, pink, 3/- Marguerites 1d. to 2d. per bunch; Morning Star, 1d.; Smilax, 1/6 to 2/-; and Asparagus, 4d. to 1/-.

A good turnover was reported in vegetables; Cauliflowers were dearer at 3/- to 6/- per dozen; Cucumbers 5/- to 8/-; and Lettuces, 9d. to 1/6.

THE WEATHER IN SCOTLAND.

High averages of temperature, sunshine and rainfal occurred during July. The mean temperature of 61.4° was about 4° over normal. On the 14th a screen maximum of 85° was reached, this being the highest for several years. The lowest maximum of 59° occurred on the 4th; the highest and lowest minimum of 64° and 44° on the 18th and the 26th respectively. On the grass, the temperature fell to 40° on the 26th, while the soil temperature at one foot deep fluctuated between 60° and 64° (the average being 61.13°). Of bright sunshine there was a total of 175 hours, being a daily average of 5.66 hours, and a percentage of 33. The 13th was the sunniest day with 13.1 hours to its credit. There was only one blank card returned this being on the 6th. The amount of rainfall equalled 3.16 inches, being .4 of an inch above normal. This was distributed over 13 days, by far the greatest quantity falling on the 23rd and 24th, viz., .52 and 1.25 inches. Barometric pressure was fairly steady, the mean being 1015.7 millibars. The highest reading of 1030.7 millibars was reached on the 31st, and the lowest, 1000 millibars, on the 21st. Winds were variable, occasionally strong; visibility mainly good, there being no ground fogs. Rainbows were observed during the evenings of the 26th and 27th *William McClelland, St. Andrews Training College Gardens Mayfield, Dundee.*

GARDENING APPOINTMENTS.

Mr. D. F. Debnam, as gardener to W. HYMAN, Esq., Harewood, Rickmansworth, Hertfordshire.

Mr. G. Fletcher, for the past five years gardener to to Mrs. BARLOW WEBB, Holmdale, Holmbury St. Mary, as gardener to H. REEVES, Esq., The Mansion, Leatherhead. (Thanks for 2/- for R.G.O.F. Box.—EDS.).

Mr. C. Ruse, recently gardener to Sir JOHN HARRINGTON, K.C.M.G., The Hyde, Luton, as gardener to STEWART HUBBARD, Esq., Tingrith Manor, Bletchley, Buckinghamshire.

Mr. William J. Jones, for the past two years gardener at Morney Cross, Hereford, and previously gardener for 11 years at Moreton Court, Hereford, has been appointed by the Rowley Regis Council Head Park Keeper at Haden Hill Park, Old Hill, Staffordshire.

Mr. A. H. Abraham, recently gardener at Bridgefoot House, Wrotham Park, and previously at Beaulieu Palace; West Leake House, Loughboro', and Gt. Stoatley, Haslemere, as gardener at Hargrave Park, Stansted, Essex. (Thanks for 2/- for R.G.O.F. Box.—EDS.).

SCHEDULES RECEIVED.

HULL AND EAST RIDING CHRYSANTHEMUM SOCIETY.—Twenty-sixth Chrysanthemum show to be held in the City Hall, Hull, on Wednesday and Thurdsay, November 17 and 18.—Secretary, Mr. E. Mennell, 10A, Spring Street, Hull.

CROSSWOOD FREEHOLD ALLOTMENT ASSOCIATION.—Fourth annual show, to be held on Saturday, August 21, at St. Mark's Men's Club, Mason's Hill, Bromley.—Secretary, Mr. F. Nicholson, 39, Newbury Road, Bromley, Kent.

CATALOGUES RECEIVED.

JOHN WATERER, SONS AND CRISP, LTD., Twyford, Berks.—Bulbs; Roses and fruit trees; Rhododendrons, shrubs, etc.

CARTER AND CO., Raynes Park, S.W.20.—Bulbs and lawns.

PERRY'S HARDY PLANT FARM, Enfield, Middlesex.—Irises, bulbs and tubers.

T. SMITH, Daisy Hill Nursery, Newry.—Hardy bulbs, etc.

PRIMLEY BOTANIC NURSERY, Paignton, S. Devon.—Shrubs and climbers.

STEWART AND CO., 13, So. St. Andrew Street, Edinburgh.—Bulbs and flower roots.

JOHN PEED AND SON, West Norwood, S.E.27.—Bulbs.

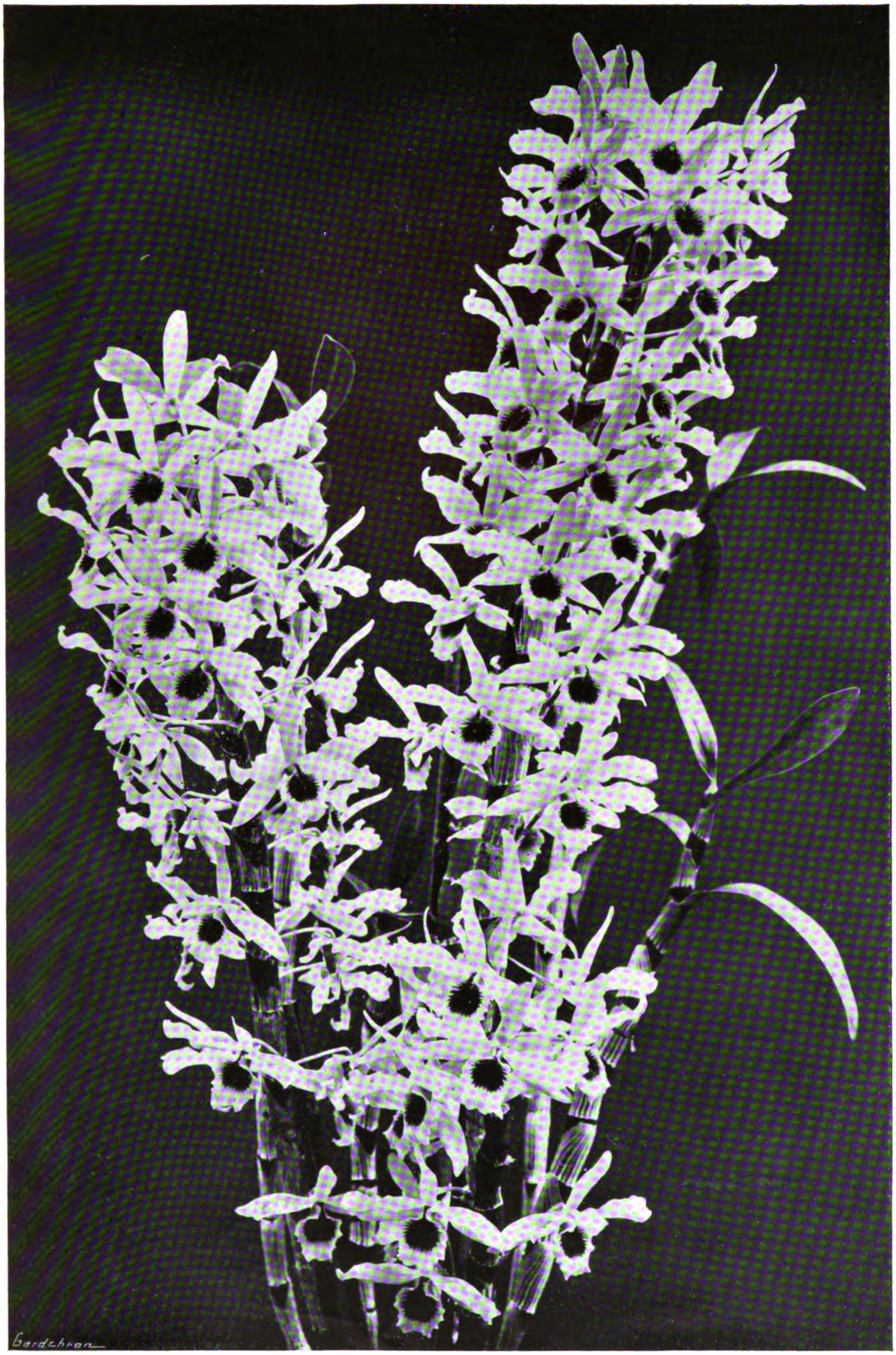
HILLIER AND SONS, Winchester.—Trees and shrubs.

V. D. CLEMENTS AND CO., 12, Stockton Gardens, Tottenham N.17.—Bulbs.

D. STEWART AND SON, LTD., Ferndown Nurseries, [nr. Wimborne, Dorset.—Bulbs.

GEORGE BUNYARD AND CO., LTD., The Royal Nurseries, Maidstone.—Roses; fruit trees.

N. I BAGGESEN, Hardy Plant Nursery, Pembury, Tunbridge Wells.—Fruit and Rose stocks, etc. (Wholesale).



DENDROBIUM THWAITESIAE.

THE
Gardeners' Chronicle

No. 2069.—*SATURDAY, AUGUST* 21, 1926.

CONTENTS.

Agricultural workers, scholarships for ... 142
Alpine garden—
  Aster Thomsonii 146
  Phyteuma comosum 146
Arnott, Mr. S. ... 142
Bog garden—
  Lythrums 146
  Parnassia palustris .. 146
Books, notices of—
  Carnations for Every Garden and Greenhouse ... 153
  Everyman's Book of Garden Flowers... 154
Bulb Garden—
  Leucojum autumnale 146
  Lilium Henryi ... 146
Cedar tree, an ancient 141
Conifers at Bagley Wood, Oxford ... 142
Dahlia, the 155
Electric ploughing ... 141
Flower garden ... 146
Fruit crops, remarks on the condition of the 154
Fruit garden—
  Strawberries ... 155
"Gardeners' Chronicle" seventy-five years ago 143
Garden notes from S.W. Scotland ... 151
Gardens, classical and legendary 150
Gooseberry caterpillars 152
Greenhouses and tool-sheds 152
Isbell, Mr. W., presentation to 142
Mesembryanthemum... 149
New Zealand, a national botanic garden for... 143
Orchid notes and gleanings—
  Coelogyne 148
  Dendrobium Thwaitesiae 148
Parks and gardens, public 154
Plants new or noteworthy—
  Erepsia tuberculata 150
R.H.S. autumn vegetable show 141
Sandy Flower Show ... 141
Sex, the chemistry of 141
Silver leaf disease ... 155
Societies—
  Aberdeen Horticultural 156
  Bakewell Horticultural 156
  Cumnock Horticultural 158
  Elgin Horticultural 156
  Royal Lancashire... 156
  Shropshire Horticultural 157
  United Horticultural Benefit and Provident 159
Tithe Act, 1925 ... 141
Trees and shrubs—
  Berberidopsis corallina 148
  Betula alba... ... 147
  Cineraria lobata ... 148
  Tree-planting ... 148
Vegetable garden—
  Cabbage Mein's No. 1 155
Week's work, the ... 144
Wisley, notes from ... 151

ILLUSTRATIONS.

Arnott, Mr. S., portrait of 142
Collomia coccinea... 147
Didymaotus lapidiformis, 149; in flower 149
Phlox Annie Laurie 143
Hydrangea vestita at Monreith... 151
Phyteuma comosum in its native habitat 145
Sphaeralcea Fendleri var. Hascombe Orange... ... 153

SUPPLEMENT PLATE.
Dendrobium Thwaitesiae.

MEAN AVERAGE TEMPERATURE for the ensuing week deduced from observations during the last fifty years at Greenwich 60·7°.

ACTUAL TEMPERATURE—
The Gardeners' Chronicle Office, 5, Tavistock Street, Covent Garden, London, Wednesday, August 18, 10 a.m. Bar. 30. Temp. 68°. Weather, Showery.

The Chemistry of Sex.

IT was to be anticipated that chemical differences would be found to exist between male and female plants even when, save for their sexual organs, they exhibit no differences of form. This anticipation has been verified in an interesting manner by American biologists*. The investigations were carried out in the first place on certain vegetable moulds (Mucors) each of which, as Professor Blakeslee had previously discovered, consists of distinct strains indistinguishable from one another, except occasionally by their vigour and always by their behaviour in reproduction. Isolated from one another each strain remains permanently asexual. It does not form reproductive organs. But if two suitable strains of a given species of Mucor be grown on nutrient agar, one on one side and the other on the other of a petri or other convenient glass vessel, they spread by growth through the nutrient medium until they meet, and where they do meet—at the equator as it were—appears gradually a line of black dots. Each dot is a zygospore having its origin sexually in the fusion of a cell cut off from a hypha of one strain with a cell similarly cut off from a hypha of the other strain. With such certainty is the phenomenon produced that the occurrence of reproductive organs by the mating of two strains identical except that they are of opposite sex has now become a routine experiment in botanical laboratories; and it is customary to speak of such complementary strains as + (plus) and – (minus) and trans-working with strains of a given species of Mucor the authors have been able to show that the strains differ in their chemical properties. The main differences are those which relate to the rate of oxidation and of reduction exerted by the strains when the hyphae or extracts of them are tested by suitable reagents. Having satisfied themselves on this head the authors next proceeded to apply similar tests to flowering plants in which the sexes occur separately on different plants. Their experiments have led them to the interesting conclusion that the + (plus) strain of Mucor and the female flowering plant exhibit similar differences in chemical composition as do also the – (minus) strain and the male flowering plant. It would be very interesting if the authors would extend their researches to those flowering plants in which the difference of sex is associated with distinct differences of form, of which plants a not inconsiderable number exists, as for example, Garrya elliptica. It is to be anticipated that in these cases the chemical differences between the sexes would be more marked than are those which subsist between male and female plants which are indistinguishable except at blossom time. It may be predicted with confidence that the line of investigation inaugurated by the authors will lead to interesting and important results and may eventually throw light on the much investigated but still unsolved problem of the physical and chemical basis of sex.

Our Supplement Plate.—The beautiful example of Dendrobium Thwaitesiae figured in the Supplement Plate accompanying this issue, was exhibited at the meeting of the Royal Horticultural Society, held at Westminster, on April 7 and 8 last. The exhibitor was Baron Bruno Schröder (gardener Mr. J. E. Shill), The Dell Park, Englefield Green, Surrey, who showed a large group of this handsome Dendrobe, including several specimens carrying over one hundred flowers. Dendrobium Thwaitesiae (see also p. 148) was originally raised by Mr. R. G. Thwaites by crossing D. Ainsworthii (aureum × nobile) with D. Wiganiae (nobile × signatum), and gained an Award of Merit on March 10, 1903. It is a free-flowering and very attractive hybrid, with deep yellow flowers and a dark wine-coloured disc on the lip.

Legacies to Gardeners.—The Rt. Hon. Wynford Rose, Baroness Tollemache, of Pickforton Castle, Tarporley, Cheshire, who died on May 16, bequeathed £50 each to her gardeners, Mr. J. Edge and Mr. L. Laurie, if still in her service.

R.H.S. Autumn Vegetable Show.—The schedule of the Amateur Vegetable Show to be held by the Royal Horticultural Society at Vincent Square on Tuesday, September 7, differs in many respects from, and is an improvement on, the one issued for the show in 1925. A notable difference, and one which will appeal very strongly to amateurs, is that entries are required only seven days before the exhibition instead of fourteen days. Thirty-eight classes are listed, and of these the first eight are for collections of vegetables, Potatos and salads. We are glad to notice that the regulations now made encourage exhibits from the smaller gardens, whereas, hitherto, a single-handed gardener had no guarantee that his collection would not have to compete with one from a garden where a staff of a dozen or more is kept. In order to further encourage amateurs to compete the amount of a third-class single fare from the competitor's railway station to London will be added to the prizes in the first four classes. Moreover, all who exhibit collections of vegetables are eligible to compete in any or all of the twenty-nine single dish classes, and in a dozen of the latter the prize-money has been increased from 10/-, 7/6 and 5/- to 15/-, 10/- and 7/6 respectively. The R.H.S. Vegetable Challenge Cup will be awarded to the competitor who secures the most first prize points (Class 1 being excluded) on the following bases, *i.e.*, Class 2, twelve points; Classes 3 and 4, nine points; Class 5, six points; Classes 6, 7 and 8, four points, and other Classes, one point. A Silver Cup, presented by Messrs. Sutton and Sons, is offered for award to the competitor who wins the first prize in the class for twelve distinct kinds of vegetables.

Sandy Flower Show.—One of the most important classes at the exhibition of the Sandy and District Horticultural Society's show, to be held on August 26, is for a group of hardy cut flowers arranged for effect on a space twenty feet by eight feet. The prizes offered are £15, £10, £7, £5 and £3 respectively. We understand that entries will be received by the Secretary, Mr. F. W. Western, Sandy, Beds., so late as August 23.

An Ancient Cedar Tree.—The *Central News* states that a magnificent Cedar tree, planted during the reign of King Henry IV of France (1589—1610) near Rouen, has been classed as a historic monument.

Electric Ploughing.—On the occasion of the World Power Conference at Basle, on September 5, Mr. R. Borlase Matthews will read a paper entitled "Electric Ploughing," and this will be delivered in connection with the Electricity in Agriculture Section of the Conference.

Tithe Act, 1925.—The following explanatory memorandum, regarding the Tithe Act, has been issued by the Ministry of Agriculture. The appointed days for the purpose of the Tithe Act, 1925, have now been fixed by Order in Council, dated 26th July, 1926. As a result, the provisions dealing with the stabilisation of the value of annual tithe rent-charge at £105 for every £100 par or commuted value, and the transfer of ecclesiastical tithe rent-charge to Queen Anne's Bounty, will operate as from March 31, 1927. This will mean that the half-yearly instalment of tithe rent-charge, both ecclesiastical and lay, which falls due for payment on April 1, 1927, will be computed on the above basis. In addition, a sinking fund payment for the purpose of redemption, at the rate of £4 10s. 0d. per annum in respect of every £100 tithe rent-charge, par or commuted value, permanently attached to a benefice or to any ecclesiastical corporation immediately before March 31, 1927, will also be payable as from April 1, 1927. As regards the rating of ecclesiastical tithe rent-charge, the appointed day for the purpose of Section 7 of the Act of 1925, has been fixed as October 1, 1926. Under that Section, the Commissioners of Inland Revenue will pay the whole of the rates assessed on or after that date in respect of such tithe rent-charge vested in Queen Anne's Bounty recovering from the Bounty as regards each £100 tithe rent-charge, £5 in respect of tithe rent-charge attached to a benefice, and £16 in respect of tithe rent-charge attached to an ecclesiastical corporation. The rates made in October, 1926, will be in respect of the tithe rent-charge accruing during the half-yearly period October 1, 1926 to March 31, 1927, and due on April 1, 1927. As a necessary corollary the Ecclesiastical Tithe Rent-charge (Rates) Acts, 1920 and 1922, giving temporary relief from rates to the owners of ecclesiastical tithe rent-charge, will cease to have effect as from October 1, 1926, which has consequently been fixed as the appointed day for the purpose of Section 25 of the Tithe Act, 1925. The expression "ecclesiastical tithe rent-charge," in this memorandum, means tithe rent-charge which immediately before March 31, 1927, is attached to a benefice or to an ecclesiastical corporation. Section 2 of the Tithe Act, 1925, dealing with the synchronisation of dates of payment of tithe rent-charge, and Section 17 dealing with the redemption of lay tithe rent-charge, came into operation on the passing of the Act, namely, December 22, 1925, while Part IV of the Act containing certain miscellaneous provisions of minor importance came into operation on February 22, 1926.

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* Sophia Satina and Blakeslee. *Proceedings of the National Academy of Science*, Washington, March, 1926.

Allium sphaerocephalum var. descendens (L.) Regel.—Lt.-Col. Durham, the Secretary of the Royal Horticultural Society, requests us to state that the above is the correct name of the plant which received an Award of Merit at the Royal Horticultural Society's meeting on July 27, under the name of Allium descendens.

Edible and Poisonous British Fungi.—In 1910 the Ministry of Agriculture published a handbook* with descriptions and twenty-five coloured plates of fungi, for the purpose of enabling the public to distinguish between species that are edible and those that are poisonous. The book met with a ready sale and has been out of print for some years, but owing to the continuous demand the Ministry has now republished it in improved form.

Dresden Flower Show.—The number of visitors at the Dresden Centenary Show which is still open has exceeded all the records for exhibitions at Dresden. On July 11 and 12, about 150,000 people visited the show; and on July 16 also the numbers were unusually large, fine weather having favoured a special Park festival held on that date, when the grounds were beautifully illuminated in the evening.

Poisons and Pharmacy Acts.—As many seedsmen and sundriesmen are concerned with the sale of weed-killers and insecticides they will learn with interest that the Lord President of the Council has appointed a special Committee, with E. A. Mitchell-Innes, Esq., C.B.E., K.C., as chairman, to consider and report whether any modifications are necessary or desirable in the Poisons and Pharmacy Acts: (1) in regard to the conditions relating to the sale of poisons; (2) in regard to the procedure for the modification or extension of the Schedule of Poisons to which the Acts apply; (3) in the system of making and enforcing regulations in regard to the keeping, selling and dispensing of poisons; (4) in regard to the Central Authority for the purposes of the Acts; and (5) in regard to any other matters to which the attention of the Committee may be drawn. This Committee has decided to take evidence on matters within their terms of reference. Any person, association, or firm, wishing to give evidence or place their views before the Committee should communicate as soon as possible with Mr. M. D. Perrins (Joint Secretary), Home Office, Whitehall, S.W.1. The Committee will inquire generally into the existing machinery regulating the sale (retail and wholesale), keeping, distribution and supply of poisons; any consideration of proposals for the inclusion in or exclusion from the Schedule of Poisons of any specific substance which is not held to fall within the Committee's terms of reference.

Successful Simultaneous Shows.—The Flower, Fruit and Vegetable shows, arranged by the *Weekly Despatch*, the *Sunday Chronicle* and Messrs. Lewis's, Ltd., which were held simultaneously at Manchester, Liverpool and Birmingham on August 5, 6 and 7 last, were especially successful. There were no entrance fees and liberal prizes were offered. The total number of exhibits were, Manchester, 3,500; Liverpool, 3,800; and Birmingham, 2,000. The entries were largest in the vegetable classes; at Liverpool there were 113 dishes of Potatos, while there were 175 dishes of Peas, in two divisions, at Manchester, 40 dishes of Shallots and 64 of Beets at Birmingham. In each of the three shows flowers generally were well represented and the classes for wild flowers were very popular.

Mr. S. Arnott.—On the evening of Monday, August 16, our able contributor, Mr. S. Arnott, was presented at the Town Hall, Maxwelltown, with an illuminated address and a "Chesterfield" in recognition of his public services, in view of his retirement from the position of Provost of the burgh of Maxwelltown, an office he has held for eleven years, having served eighteen years as a member of the Town Council. The presentation was made by Provost Brodie on behalf of the community, the movement having been organised by the Town Council and the Parish Council of Troqueer, of which Mr. Arnott has been a member for fifteen years and chairman for nine years. Mr. S. Arnott is a native of Dumfries, where he was born in 1852. From his earliest youth he has lived among and been interested in hardy flowers, due largely to the early influence of his mother. He was engaged in business in Dumfries, but, as a result of the urgent advice of his medical attendant and of other medical advice, he retired to Carsethorn in 1884, and after his health was partly restored, devoted himself largely to horticulture, and cultivated a large collection of alpine and border flowers. At the end of 1887 he began contributing notes on his favourite flowers to *The Gardeners' Chronicle*, and has continued to do so ever since. He has also assisted in the preparation of several works, including Cassell's *Dictionary of Gardening*, and, more recently, Black's *Gardening Dictionary*. He has also written in *The Book of Bulbs* and *The Book of Climbing Plants*, and, with the collaboration of the late Mr. R. P. Brotherston, who contributed the chapters on vegetables and fruits and flowers under glass, he wrote a work entitled, *Gardening in the North*. In 1905, he removed to Maxwelltown, and prior to his departure from the district was entertained at a public dinner by the inhabitants of Kirkbean Parish and presented with a gold watch. While in Kirkbean Parish he was elected a member of the School Board and Parish Council, and was chairman of these bodies up to his removal. In Maxwelltown, in addition to his membership of the bodies named above, he was a member of the School Board, retiring on the suppression of the latter by the education authorities. He has held appointments in many other public bodies, including the County Council of Kirkcudbrightshire, for which county he is a J.P. Mr. Arnott's retirement from public duties is due to advancing years and his state of health.

MR. S. ARNOTT.

Scholarships for Agricultural Workers.—In the list of the successful candidates for scholarships offered by the Ministry of Agriculture and Fisheries, which we have just received, we are pleased to note the name of Mr. William George Fry, of the Royal Botanic Gardens, Kew, who has won a scholarship in Class II, which is tenable for two years.

Presentation to Mr. W. Isbell.—Mr. W. Isbell recently completed fifty years' service with Messrs Low, of Bush Hill Park Nursery, Enfield. As a mark of esteem and in honour of the event Mr. Stuart Low presented him with a silver tea service and an illuminated address of congratulation inscribed:—Presented to Mr. Walter Isbell by his friends at the Bush Hill Park Nurseries, Middlesex, England, as a mark of their personal esteem and of their high appreciation of his life's work so successfully devoted to the preserving and multiplying of so many beautiful and useful, though often extremely delicate, plants, trees and shrubs, gathered from every clime. July 13, 1876—July 13, 1926.

Kauri Gum.—Some interesting particulars of Kauri Gum, which is dug as a fossil in mineral form from the earth where Kauri forests are buried by volcanic action, are given in the *Journal of the Royal Society of Arts* for August 13. The centre of the product is Auckland, New Zealand, the industry being located on a peninsula to the north of that city. It is valuable gum used in the manufacture of high grade varnishes and linoleums, and the chief purchasers are the United States of America and the United Kindgom. The United States purchased 4,634,495 pounds in 1925. The production in 1925 was 5,069 tons, 5,434 tons in 1924, and 6,502 in 1923. The falling off in production appears to be due to the greater difficulty in obtaining the gum, owing to the exhaustion of the surface supplies. The New Zealand Government passed the "Kauri Gum Control Act" last year, with the object of valorizing the Kauri Gum output for the benefit of the exporter. As, however, there are many substitutes in the form of other varnish gums, the valorization policy is not likely to be very effective. During the present year the Government of New Zealand is preparing to open up new Kauri fields known as the Peorta and the Kara, ten to fifteen miles from the port of Whangarei.

Sale of Claremont.—It is announced that Messrs. Knight, Frank and Rutley have again sold Claremont, Esher, which was for many years the residence of the Duchess of Albany. It will be remembered that early in 1922, following the decease of the Duchess, the fine old residence of Claremont was sold to the late Sir William Corry, Bt. The first house, built by Sir John Vanbrugh, the architect and dramatist, in 1708, was enlarged to its present form by Lord Clive, and at different times has been the residence of other distinguished personages, including the Duke of Newcastle, Princess Charlotte, daughter of George IV, and her husband, Prince Leopold; Queen Victoria, Louis Phillipe and his Queen; Princess Louise, and, in more recent years, the Duchess of Albany. Claremont has always been famed for its gardens, of which illustrations were given in *The Gardeners' Chronicle* of October 14, 1916, and April 15, 1922.

Conifers at Bagley Wood, Oxford.—The *Handbook of the Conifers grown at Bagley Wood, Oxford,*" which has just been published, shows that in the Arboretum proper there are now 122 species and named varieties. The genera included are: Abies, twenty-one species; Araucaria, one species; Cedrus, three species; Cephalotaxus, three species; Cryptomeria, one species; Cupressus, nine species; Ginkgo, one species; Juniperus, four species; Larix, seven species and two varieties; Libocedrus, one species; Picea, eighteen species and three varieties; Pinus, twenty-six species and four varieties; Podocarpus, three species; Prumnopitys; Pseudolarix, Pseudotsuga, Saxegothea, Sciadopitys, Taxus and Taxodium, one species each; Sequoia, two species; Thuya, five species; and Tsuga, three species. For the most part only one specimen of each Conifer has been planted, though there are occasionally two or more specimens, the greatest number being six of Pinus Laricio var. calabrica, while there are five of Abies nobilis. Although a group of a few trees was planted near the entrance gates two or three years earlier, the planting of the Arboretum was commenced in January, 1921, when twenty species were purchased and planted. Since then additions have been made, chiefly through gifts from the Royal Botanic Gardens, Kew, Professor W. Somerville, the Forest of Dean, and Messrs. Hillier and Sons.

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* *Edible and Poisonous Fungi.* Ministry of Agriculture, 10, Whitehall Place, London, S.W. 1. Price, half-cloth boards, 3/-; quarter-cloth boards, 2/6, net, post free.

A National Botanic Garden for New Zealand.—We are gratified to learn from the *Evening Post* of Wellington, New Zealand, that Mr. B. C. Aston continues his advocacy of a National Botanic Garden for New Zealand. Our readers will remember that in *The Gardeners' Chronicle* of December 20, 1914, we referred at length to Mr. Aston's earlier endeavour in the same direction. Quite recently Mr. Aston gave a lecture entitled "The Husbandry of New Zealand Plants," before the New Zealand Philosophical Society, and illustrated it with a large number of excellent lantern slides. In the course of his lecture, Mr. Aston again made a plea for a National Botanic Garden, and in support read extracts from our issue of December 20, 1924. Mr. Aston pointed out that New Zealand possesses "some of the most beautiful plants in the world—plants which equal, if not excel, those from other climes, both in beauty of form and in beauty of scent. Curiously enough, for some unexplained reason, the New Zealand flora falls behind that of some other countries in the matter of colour." Mr. Aston pointed out that amateur gardeners might do much to popularise the New Zealand flora by growing the rarer alpine species in well-constructed rock gardens. At Karori, Mr. Aston himself grows a large variety of native plants with conspicuous success.

Ceanothus Henri Desfosse.—The secretary of the Royal Horticultural Society writes with reference to the new Ceanothus shown by Messrs. R. Veitch and Son at the R.H.S. meeting on the 27th ult. (see p. 97): "I should be grateful if you would kindly give publicity to the fact that Ceanothus Henri Desfossé is the correct name of the plant which received an Award of Merit at the Royal Horticultural Society's show on July 27 under the name of Ceanothus Henri Defossé."

Coloured Postcards of Kew Gardens.—Four new sets of the coloured postcards published by the Royal Gardens, Kew, are now available. They include stove and greenhouse plants, Orchids, Roses and decorative plants. Set 12, representing stove and greenhouse plants, includes illustrations of Brunfelsia calycina, Streptosolen Jamesonii, Camellia reticulata and various Cactaceous plants. The Roses illustrated (Set 14) include Betty Uprichard, Miss Van Rossem and Lady Elphinstone. Of the Orchid, there are illustrations of Odontoglossums, Dendrobiums, Masdevallia, Stelis and Calanthe. The decorative plants shown in set 16 include Iris flavescens, I. pallida, Begonia manicata, Magnolia parviflora, Robinia Kelseyi and Delphiniums. There are now twelve sets of cards in black and white and sixteen in colours. The prices for single cards in black and white are one penny, and for the coloured postcards, twopence, with postage in each case, one halfpenny.

Appointments for the Ensuing Week.—Tuesday, August 24: Royal Horticultural Society's Committees meet; Newcastle Horticultural Mutual Improvement Society's meeting and lecture. Wednesday, August 25: Southport Flower Show (three days); Dufftown Flower Show; Dunbar Flower Show. Thursday, August 26: Dundee Horticultural Society's Show (three days); Royal West Renfrewshire Horticultural Society's Show (2 days); Paisley Florists' Society's meeting; Ayton Flower Show; Appin Flower Show. Friday, August 27: Dunfermline Flower Show (two days); Beith Flower Show. Saturday, August 28: Alexandria Flower Show; East Linton Flower Show; Bothwell Flower Show; Bridge-of-Weir Flower Show; Cambuslang Flower Show; Carstairs Flower Show; Chirnside Flower Show; Chryston Flower Show; Coalburn Flower Show; Comrie Flower Show; Dailly Flower Show; Gartmore Flower Show.

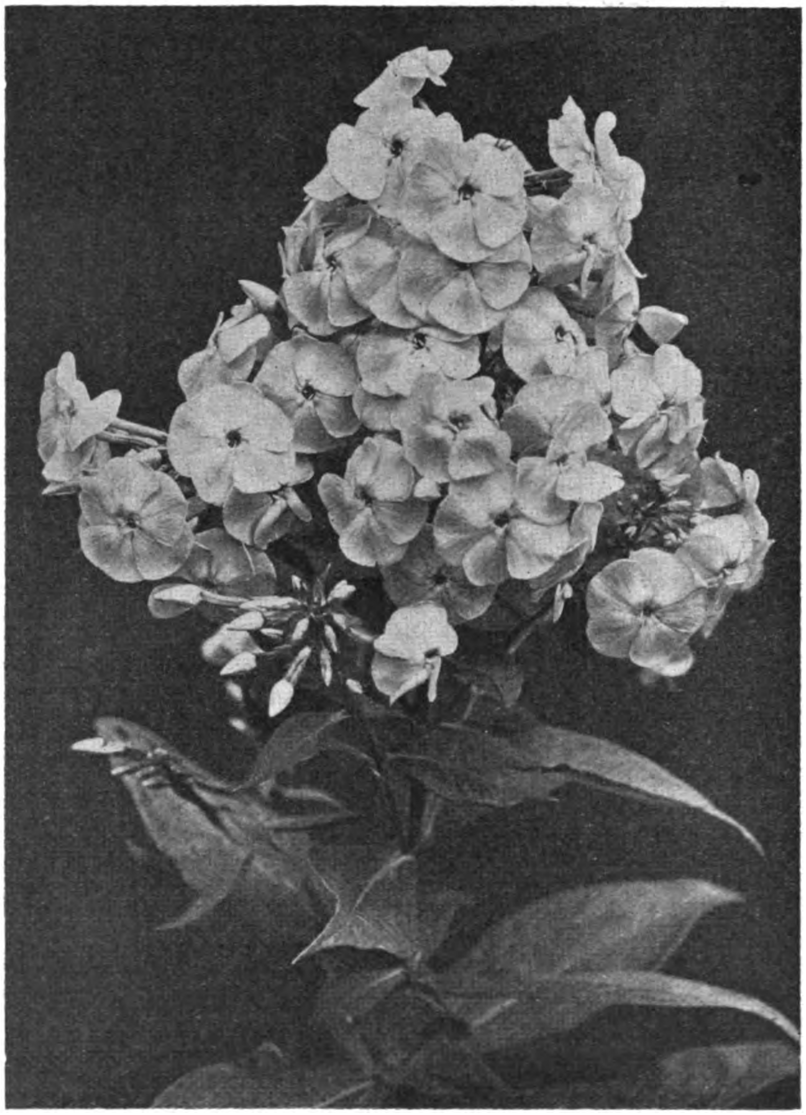

FIG. 70.—PHLOX ANNIE LAURIE.

R.H.S. Award of Merit, August 10. Flowers deep salmon-pink, with rosy-purple zone. Shown by Hon. Vicary Gibbs (gr. Mr. E. Beckett), Aldenham House, Elstree. (see p. 137).

"Gardeners' Chronicle" Seventy-five Years Ago.—*Vitality of Seeds.*—Professor Henslow said, that as one of the committee (of the British Association) appointed to report on this subject, he had planted several seeds this year, and out of these two species had grown. They both belonged to the order Leguminosae, and one was produced from seed seventeen, and the other from seed twenty years old. On the whole, it appeared that the seeds of Leguminosae retained their vitality longest. Tournefort had recorded an instance of Beans growing after having been kept one hundred years; and Willdenow had observed a Sensitive-plant to grow from seed that had been kept sixty years. The instances of plants growing from seeds found in mummies were all erroneous. Some seeds which had been recently obtained from a mummy tomb, with great care, had been sown, and came up, but turned out to be Maize. This at once showed that some error or fraud had been committed in obtaining the seeds, as the Maize was a plant of the New World. Even in the case recorded by Dr. Lindley of a Raspberry seed found in the interior of a soldier's stomach who had been buried some hundreds of years, and which had grown, it was now known that the seed had been introduced into the body after its disinterment. Dr. Cleghorn stated that he did not know how the seeds of new plants were conveyed to the spot, but he had often seen after the burning or clearing of a forest in India, new plants spring up which had not been seen in the spot before. Mr. Babington related a case in which Mr. Fries, of Upsala, succeeded in growing a species of Hieracium from seeds which had been in his herbarium upwards of fifty years. Desmoulins recorded an instance of the opening of some ancient tombs in which seed was found, and on being planted they produced species of Scabiosa and Heliotropium. *Gard. Chron., August* 23, 1851.

The Week's Work.

THE ORCHID HOUSES.

By J. Collier, Gardener to Sir Jeremiah Colman, Bart., Gatton Park, Reigate, Surrey.

Dendrobiums. Towards the end of the present month many Dendrobiums belonging to the D. nobile group will be completing their growth, and when the terminal leaf appears, the resting period can be encouraged by treating the plants to cooler and drier conditions in a place where they will receive the benefit of extra sunlight and air, so as to consolidate and thoroughly bring the newly made growths to maturity. At the stage when growth is finishing, the roots that were produced earlier from the bases of the new shoots becom every active and increase in length, frequently throwing out lateral rootlets so that it is best not to subject them to a sudden check by moving the plants directly from their growing quarters. It is better, where possible, to select a position on the side of the house where more light and air can be admitted and less moisture given the plants; they should then be gradually exposed to the sun for a longer time. Any of these Dendrobiums that have completed their growths should not be allowed to become too dry at the roots or they will finish up suddenly, and this may cause them to start into new growth immediately from buds that should remain dormant until after the flowering season. They should be watered just often enough to keep the roots in a healthy condition and to prevent undue shrivelling of the pseudo-bulbs. Plants that are still growing freely should receive every encouragement to complete their pseudo-bulbs as quickly as possible.

Pleiones.—The various members of this genus will now be completing their growth and should be afforded more light and air, and only given sufficient water at the roots to keep the compost moist and the bulbs plump, until the foliage becomes ripe and falls off. When this occurs and until the flower buds appear, water will be needed in very limited quantities, after which the supply should be increased until the flower buds are fully developed.

THE KITCHEN GARDEN.

By F. Streeter, Gardener to Lord Leconfield, Petworth Park, Petworth, Sussex.

Potatos.—So soon as the haulm of the second-early varieties dies down the crop should be lifted carefully; if seed sets are to be saved they may be picked out and placed in a cool shed and the ware used as required. Give the ground a dressing of lime, and if the winter Green crops are small there is yet time to make the deficiency good by late plantings. The ground at the present time is very dry and it will be advisable to give the plants a thorough watering and damp them overhead at night for the first week or so till they become thoroughly established.

Endive.—Plants from previous sowings are ready for transplanting on ground that has not been too freely manured. Plant them a foot apart, keep the soil well-watered and thoroughly clean. Make other sowings according to the requirements.

Spring Cabbage.—The ground for this important spring crop must be thoroughly cultivated and given a good dressing of soot and lime so that everything is in readiness when the plants are fit for their permanent quarters. A very good plan is to allow this crop to follow the spring-sown Onions, provided the latter can be thoroughly ripened and harvested in time.

Beet.—As the roots become large enough they should be lifted carefully and stored in sand in a frost-proof shed. Keep the tap root intact, twist the foliage off, and do not bruise the bulbous portion or it will bleed and lose colour. Beet are too often left in the ground overlong, and get much too large and coarse.

General Remarks.—Continue to keep all growing crops supplied with water and the ground free from weeds by the use of the Dutch hoe during fine weather; this will greatly facilitate the work of cleaning during the wet autumn months.

FRUITS UNDER GLASS.

By T. Pateman, Gardener to Sir Charles Nall-Cain, Brocket Hall, Hertfordshire.

Pot Vines.—Vines that are being grown in pots to produce an early crop next year may shortly be stood outside in a sheltered position where they may obtain the maximum amount of sun and air to ripen the young canes. The pots should be plunged to about half their depth and the young canes made secure so that the leaves are not damaged, for it is desirable to keep the foliage in a healthy condition so long as possible. Watering and feeding should be carefully attended to until the foliage matures and finally falls. The laterals may be removed with a sharp knife so that the whole energy of the plant may be diverted into the young canes.

Early Vinery.—Vines which were started into growth last November to produce an early crop of Grapes will require special encouragement to ripen their wood. The shoots should be shortened to about one-third of their present length and all laterals cut away, if any appear. The border must still be kept well-supplied with water and the foliage well-syringed to keep red spider in check. Where the vines have been badly attacked with this pest they should be syringed with a strong mixture of soft soap and sulphur. Keep the ventilators open day and night so that plenty of fresh air may circulate freely about the vines.

Late Vines.—The Grapes will have passed the scalding stage, the vinery may be closed for a few hours early in the afternoons of sunny days admitting a little fresh air by opening the top ventilators at night. Treated in this way the Grapes will swell freely with a minimum of fire-heat; indeed, it will be necessary only to warm the pipes slightly at night to maintain a buoyant atmosphere. If the berries are still too tightly packed in the bunches they should be thinned without delay for, as a rule, these Grapes remain on the vines until so late as January next year, and should a berry have to be removed at a later date it is very difficult to take it out without causing some damage to others. Generous supplies of liquid manure should be applied to the roots until the berries are finishing well, when clear water only should be given.

HARDY FRUIT GARDEN.

By W. Auton, Gardener to Viscount Elveden, Pyrford Court, Woking, Surrey.

Figs.—Outdoor Figs will now begin to ripen their fruits. See that no unnecessary wood is left to cover the fruits and, as flavour develops considerably during the last few days on the tree, care should be taken that the Figs are not gathered too early. It is wise to net the trees as a protection against birds. See that trees bearing heavy crops do not suffer from lack of moisture at the roots.

Pears.—Early varieties of Pears, commencing with Doyenné d'Eté, Citron des Carmes and Beurré Giffard, are now becoming ready for use. It is necessary to use these Pears almost direct from the tree, and their season is very short. Williams's Bon Chrétien and Jargonelle will carry on the supplies, and a few of the former may be gathered a little before they are ripe and laid on a warm shelf to hasten the ripening process when the period of supply will be somewhat lengthened. Ripe fruits cannot be kept under any conditions, however, and unless trees are grown in various positions on walls and in open quarters the period of supply is very short.

Apples.—Early varieties of Apples, such as Gladstone and Irish Peach quickly lose their flavour if gathered and stored, and they are generally preferred for use direct from the tree. Where birds are troublesome, this frequently entails netting the trees, but usually nets become available from Raspberry and bush fruit quarters at this season.

Gooseberries.—Except for late supplies of dessert fruit on north walls, which will need good protection against birds, Gooseberry fruits will have been gathered, and any further necessary thinning of the wood should be done immediately. Keep a sharp watch for American mildew if this disease has been prevalent, and remove and destroy all young tips showing it so soon as it appears. Spray affected bushes with sulphide of potassium at the rate of half-an-ounce to one gallon of water to prevent the spores of the summer fruit of the fungus from developing and fructifying.

The Wineberry.—Ripening as it does a little later than the Raspberry, this is a very useful fruit for the present season, when the supply of soft fruits is not very plentiful. It requires similar treatment to the Raspberry but needs a sheltered position and appears to do best on the south or south-west side of a fence or building.

Morello Cherries.—These are now ready for gathering, and if needed for current supplies, some fruits may be left hanging in the trees for some time to come. If required for bottling, however, it is not wise to allow them to become too ripe as they are then difficult to handle.

Summer Pruning.—Any summer pruning which has been deferred should now be completed so that light and air may be freely admitted to all parts of the tree and that the energy for the remainder of the growing season shall not be expended on unnecessary growth.

THE FLOWER GARDEN.

By F. C. Puddle, Gardener to Lord Aberconway, Bodnant, Taly-Cafn, North Wales.

Amaryllis Belladonna.—These beautiful autumn-flowering plants are now resting, and if it is desired to transplant any of the bulbs this should be done forthwith before the flower spikes begin to push up. The bulbs succeed best when planted in a sunny position at the foot of a wall. A moderately rich but well-drained border should be prepared for them, and if the position is inclined to be wet during the winter, it will be an advantage to raise the border slightly above the surface of the surrounding soil. The bulbs should be planted from four to eight inches deep according to the climate of the district in which they are grown. In the milder districts Nerine Bowdenii will succeed outdoors under similar conditions.

Rambler Roses.—So soon as the season's display of flowers is over, climbing Polyantha and Wichuriana Roses should receive their annual pruning. The old flowering growths should be cut hard back wherever possible and the young growths from the base of the plants trained into their places. If there is insufficient of these basal growths to cover the required space, a few of the best of the old ones may be retained, but these should be shortened back to a strong, young growth. It is, however, very necessary for the future well-being of the plants, that a number of the older stems be cut back to the base every year; otherwise they will become leggy and ill-furnished.

Liliums.—The majority of the summer-flowering Liliums have passed out of flower, and (except in cases where it is desired to save seeds) seed-pods which are forming should be removed, as this will greatly assist the recuperation of the bulbs in preparation for next season's flowering. It is a good practice, however, to ripen and sow a few seeds of the various species each year, as healthy young stock produced in this way is more likely to become established than are imported bulbs, as they do not experience the unavoidable check and exhaustion which an overseas journey entails. Seeds of certain Liliums are notoriously slow in germination and subsequent growth is slow, therefore, some years may elapse before flowering occurs. Happily, however, a few of the most beautiful species are not so tardy, and amongst these L. Farreri (Duchartrei), L. regale and L. philippinense var. formosanum may be flowered in from two to three years from seeds. At the moment of writing, some of our seedlings of the last-named species are opening their first flowers, eighteen months from the time the seeds were sown.

Lilium candidum.—If fresh plantings of Lilium candidum are contemplated, the new bulbs should be obtained and planted as early as possible, for it greatly assists the establishment of the bulbs if they are planted early enough to develop their winter foliage in the new position. A well-drained, sunny position should be chosen, and the bulbs should be planted more shallowly than is usual for the majority of Liliums; two inches of soil above the top of the bulbs is ample. Healthy, established clumps of L. candidum are best left undisturbed, but clumps which are infected by the dreaded fungus, Botrytis cinerea, may be lifted and the bulbs washed with a fungicide, after which they may be replanted in a positoin well-removed from the previous site. It is often recommended that flowers of sulphur should be dusted between the scales of the bulbs, but care should be taken not to use this specific in such quantities that it will come in contact with the roots, for although an excellent fungicide, sulphur is distinctly harmful to the roots of plants. If it is inconvenient to transplant infected plants, it will be found beneficial to cut off the diseased stems and remove the surface soil until the bulbs are exposed, when the whole site may be dusted with slaked lime and lightly covered with fresh soil. The infected soil should be burned.

PLANTS UNDER GLASS.

By John Coutts, Assistant Curator, Royal Botanic Gardens, Kew.

Amphicome Emodii.—Where choice plants for the cool greenhouse are favoured this beautiful species should be more generally grown, as it is a distinct subject in its elegant foliage and rose-coloured flowers. It may be increased by means of seeds, or cuttings which root readily in a case in a cool house. This plant thrives in any good potting compost, and only requires cool house treatment in all stages of its cultivation; good examples may be flowered in five- or six-inch pots. Amphicome arguta succeeds under the same treatment as the former species, but is by no means such a showy plants.

Streptosolon (Browallia) Jamesonii.—This plant produces brilliant orange-coloured flowers, tinged with scarlet, and well-flowered specimens are very fine for conservatory decoration. It is also an ideal subject for clothing a sunny back wall, pillars, or draping rafters; in such positions it produces its flowers freely for several months. To ensure fine colour and free flowering it is essential that the plant is freely exposed to the sun. A stock of plants may be easily raised at this time by means of cuttings which root readily in a close case. In their younger stages the plants are useful for furnishing the plant stages, but, as already stated, this Streptosolon is seen at its best when planted out or grown as large specimens in pots or tubs. It thrives in any good potting compost, and succeeds throughout the year in an ordinary greenhouse.

Loropetalum chinense.—Well-grown specimens of this distinct-looking Chinese plant, with its creamy-white fringed flowers, are very attractive for a cool greenhouse during the late winter and early spring. It may be increased by means of cuttings made of half-ripened shoots and rooted in April under a bell-glass in a cool house. Although this plant thrives in a light, well-drained compost, careful watering is essential at all times, and perfectly cool treatment should be afforded it during all stages of its cultivation.

Sparmannia africana.—This winter-flowering greenhouse plant is so useful for conservatory decoration that it is deserving of more general cultivation. It is easily propagated by means of cuttings in the spring, and if the latter are potted on into six-inch pots they make good plants for the stage the first season, but it is seen at its best as large specimens, either as bushes or standards. During the summer the plants should be stood out-of-doors in an open, sunny position: this outdoor treatment is very necessary to ensure freedom of flowering.

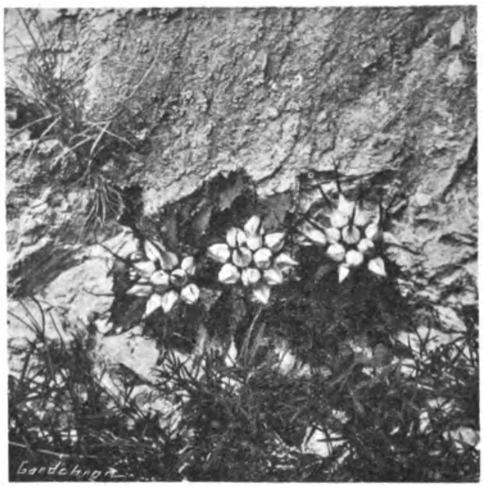

FIG. 71.—PHYTEUMA COMOSUM IN ITS NATIVE HABITAT.

(see p. 146).

Shading.—As the season advances less shading is necessary, and much care should be exercised in this respect, as there is a general tendency to shade too densely, with the result that plants get weakened and produce soft, unripened shoots that are not likely to winter well; in this respect it is surprising the amount of sunshine most plants will withstand provided they are gradually accustomed to it. From the economical standpoint, all summer blinds should be dried and housed so soon as it is possible to dispense with them.

FOR NORTHERN GARDENERS.

By A. T. Harrison, Gardener to the Marquis of Ailsa, Culzean Castle, Maybole, Ayrshire.

Freesias.—Where Freesias have been thoroughly dried and ripened off, the tubers should now be shaken clear of the old soil and sorted into various sizes; the firm, medium-sized tubers should be immediately re-potted, using from eight to ten to fill a six-inch pot; a compost of turfy loam with the addition of leaf-soil and sand gives excellent results. Freesias should never be buried in a covering of ashes or other material, as it is important to produce strong, sturdy growths from the start, and an open situation, either in a cold frame or in a cool house suits them best. The smaller tubers should be grown on for another season, using either pots or boxes, according to quantity, and while these may produce a few flowers, the plants will be making steady progress, and result in flowering-sized tubers for next year.

Bedding Arrangements.—The present is a most suitable time to take notes of the existing arrangements in our own, as well as in any gardens visited, while the various plants employed are still at their best. It sometimes happens that two beautiful subjects, if planted together, utterly fail to harmonise, and a jarring note is the result, therefore, as a guide for future planting, notes taken now are most useful. A case in point may be quoted; the comparatively new and useful bedding Pentstemon Castle Forbes, was used to furnish a large rectangular bed, with a ground work of the pale mauve Viola Kitty Bell, the bed being interplanted with groups of Gladiolus Prince of Wales. While the Pentstemons and Violas alone were in flower, harmony reigned supreme, but so soon as the orange-pink flowers of the Gladiolus made their appearance the effect was spoiled, and the Pentstemon flowers had to be removed. Secondary and flowering shoots are again pushing up, and when the Gladioli are over their spikes will also be removed, and the Pentstemons will once more come into bloom, but never again will the same combination be employed. A very effective association of simple annuals was noted recently, and consisted of Calendula officinalis and the deep blue Nigella Miss Jekyll; the orange tone of the former contrasted with, and at the same time enhanced the deep blue of the latter in such a way as to attract attention and admiration.

Propagation of Bedding Plants.—Where a variety of tender, bedding plants is employed, cuttings must be taken at an early date, and rooted in pots or boxes in readiness for the coming winter season. Pelargoniums rooted thus early form good stock plants, from which cuttings may again be taken in early spring in order to increase their numbers. A peculiar feature of these bedding Pelargoniums is that whereas cuttings inserted now under cool conditions must not be watered, or damping off is certain, those taken in February and inserted in a brisk heat in a propagating house may be watered freely without showing symptoms of the same trouble. Viola cuttings, if taken thus early and put into portable frames, may, after they are rooted, have the frames removed and put to further use, the Violas being hardy enough to withstand the winter without further protection. In the taking of all early cuttings care must be observed to use only those which can be spared without ruining the appearance of the beds, as the season of effectiveness is by no means over, and much damage may be done if cuttings are taken in a haphazard manner.

Cinerarias, Primulas, etc.—Seedling plants of these subjects, if not already potted on, must be attended to without delay. Where Cinerarias have been grown in boxes as previously advised, they may now be transferred to four-inch or five-inch pots, using an ordinary compost and keeping the "collar" well up, for if buried too deeply they are liable to damp off. The same remark applies to Primulas, but as they have been growing in thumb pots the right depth is more readily gauged. Shade must be afforded during sunny weather and the plants grown in as cool conditions as the weather permit.

Vineries.—The earlier varieties of Grapes in cold vineries are now approaching the ripening stage, and ventilation must be given night and day in order to preserve a buoyant atmosphere, and incidentally improve the flavour of the fruits. Wasps are a source of trouble at this stage and means must be taken to exclude them, or they may do irreparable damage. With us, both top and bottom ventilators are opened to their utmost and the apertures carefully covered with wasp-proof netting, while a diligent search is made in every direction for the nests, which, when located, are soon dealt with by an application of cyanide of potassium.

ALPINE GARDEN.

PHYTEUMA COMOSUM.

Among Phyteumas one may safely assert that from the gardener's point of view, P. comosum holds chief interest, its great heads of pale mauve flowers and jagged, blue-green leaves seldom failing to inspire enthusiasm. Professor Dalla Torre does not allow that it is a Phyteuma, he prefers the name of Synotoma comosum, Shulz, but we who follow respectfully in the wake of Kew keep to Linnaeus's classification.

The flowers are typically Phyteuma in form, purple at their tips, shading off to lavender-mauve where they enlarge towards the base. Each individual flower looks rather like the head of an ant-eater, with its tongue out, the conglomerate head of blooms giving altogether a weird appearance. The leaves are so deeply serrated as to be unlike any of its Phyteuma relatives. I have just returned from the Tyrol where I went to study this plant—the accompanying photograph (Fig. 71) was taken there and shows it as it grows in nature.

In cultivation—at least, I find it so in Letchworth—P. comosum has a tendency to flower on a very short stalk, giving it the appearance of being almost stemless, which by no means detracts from its beauty. In nature, as often as not, the flower heads are on a stalk six or eight inches long, and almost invariably the plant is found growing in the face of limestone rock. Sometimes it condescends to an open crevice, but generally it seems to prefer to drive its fleshy roots into the bare rock.

Collecting Phyteuma comosum is no easy matter; either the plant is on sheer cliff, fifty feet out of reach, or quite inextricable. I had to search many hours to find plants on rock one could split, and perhaps out of many hundreds one would be lucky to find a single plant in a position where it would be worth one's while to spend half-an-hour cutting away the rock to get its roots out intact.

It is not a high alpine, I never found it growing above the Pine belt, and it seems in nature to be indifferent to sun or shade. Its only marked dislike seemed to be proximity to other plants, Sometimes it would seed itself on a gritty ledge and send its roots down through the grit to the rock, but I failed to find even a seedling on the screes below the rock faces on which it grew so freely.

Locally, P. comosum is known as "Teufelskralle," or in some places, "Rapunzel," after the maid in the fairy tale, who, from her prison in a tower, let down her hair to assist her cavalier to climb up to her aid.

In cultivation, this Phyteuma does not offer great difficulties. Its worst enemy is the slug; given protection from this, all it needs is tight packing at the roots with limestone chips mixed with some leaf-mould and soil, and no encroachment from other plants. If one is fortunate enough to be able to establish it in a fissure of limestone rock it asks for nothing better.

My best plant of it is one I established in a lump of tufa rock on a sink, two years ago; it flowered beautifully this spring. *Gavin Jones.*

ASTER THOMSONII.

Writing of this Aster in *The English Rock Garden*, the late Mr. Farrer remarks:—"One of the most beautiful of all," but "deplorably difficult of increase." It is also reputed to be a somewhat difficult subject to winter successfully in the open, and some growers lift their stock and winter the plants in a cold frame.

A warm, sunny position should be chosen for this Aster and ground that has been well prepared in advance of planting. Aster Thomsonii varies in height from eighteen inches to three feet, and in some seasons commences to flower earlier than others. The lilac-blue flowers, borne singly on long peduncles, are two inches in diameter. While most effective in the mass, care should be taken not to plant too closely, for each plant should be seen individually. A. T. nana is a dwarfer and more compact form. *Fred W. Jeffery.*

BULB GARDEN.

LEUCOJUM AUTUMNALE.

Planted in groups in the rock garden or the front of the flower border, Leucojum autumnale, the autumn Snowflake, is truly exquisite in its grace and beauty. It flowers in August and September, as a rule, though I have had it in bloom before July had passed away. Some authorities state that it is tender, and this is probably the case in the colder parts of Great Britain, but in the milder districts and near the sea, in light, dry, well-drained soil, the plant is certainly hardy. I have had it for years in such localities and have never lost any bulbs through the severity of the winter. In Edinburgh, however, in one nursery known to me, it was protected by a hand-light in winter.

Those who only know the summer and spring Leucojums can hardly realise the charm of L. autumnale. It has small bulbs, only about half-an-inch thick, and the flowers are usually produced before the grass-like leaves, although the latter are frequently extended to nearly their full length before all the flowers have passed away.

The stems are only four or five inches long. and bear several flowers on each. The latter are almost chocolate-brown and the white flowers, prettily tinged with pink, are of a satin-like lustre. The leaves are very narrow and grass-like and last for a considerable time after the flowers have withered. This lovely little plant was figured in the *Botanical Magazine*, t. 960

Two varieties have been described, but these are not apparently in commerce. As already suggested, L. autumnale needs an open situation and a light, dry, sandy, well-drained soil; a position on a level part of the rock garden suits it admirably. It should be planted about an inch deep and. for the first season, may, by way of precaution, be covered lightly with litter after the leaves have withered. It is possible that the bulbs may vary in hardiness, as L. autumnale is found wild from Morocco and Portugal to the Ionian Islands. It is one of the choicest of bulbous plants, and deserves all the care and attention possible. It also makes a charming plant when grown in pots in the alpine house, placing about six or more bulbs in a six-inch pot. *S. Arnott.*

LILIUM HENRYI.

Although discovered in Western China, nearly forty years ago, Lilium Henryi has not attained the popularity of certain later introductions—L. regale to wit. It is a beautiful Lily, bright and graceful, and I well remember the care with which I planted some bulbs at Kew, near the Orchid houses, over thirty years ago, and how the late Mr. Watson and I watched the developing stems and flowers.

There are gardens, I believe, in which L. Henryi does not succeed, but in my own garden, in somewhat light soil (over gravel), enriched with decayed manure sometime before planting, it is a success—at least, so I think. Bulbs planted three years or so ago and not disturbed have made increasingly strong growth each season, and two stems are now nearly nine feet high, each carrying twenty-flowers and buds. These tall specimens are of the narrow-leaved, green-stemmed form, and, so far as my experience goes, this type flowers earlier and grows taller than the broad-leaved and dark-stemmed forms. The narrow-leaved form—there are a dozen or more plants—have all (August 14) expanded two or more flowers, whereas no flower of the broad-leaved form will be open for at least another week.

Subject, of course, to correction by Mr. Grove, it appears that the broad-leaved and less aspiring form of L. Henryi invariably has dark stems, but the stems of the narrow-leaved form vary from moderately dark to green. Narrow-leaved forms have also longer pedicels to the flowers, at least, that is my experience. At present, L. Henryi is making a pleasing display and, given kindly weather, the broad-leaved plants should carry some of their apricot-orange, dark spotted flowers into mid-September. *C. H. C., Brentford.*

BOG GARDEN.

LYTHRUMS.

The purple Loosestrifes are very effective and useful plants for the waterside or, indeed, any cool, good soil. Not only are they very stately in growth and stout enough to stand erect without support, but they may always be relied upon to flower profusely from soon after midsummer to late autumn. Thus they carry on after the Spiraeas and Astilbes, and they are indeed, not at their best until these are over. There is one other feature about these Lythrums which is worth noting, and that is they do not spread unduly and in this garden I have never found a self-sown seedling.

Our own native L. Salicaria in any of its named forms (roseum and superbum are excellent), is one of the noblest of the family, producing sheaves of blossom ranging from a magenta-crimson to cherry-rose, to a height of five feet or more.

L. alatum, an American species, is another admirable plant of about half the stature of the above, with smaller, narrower leaves, a light and spreading habit and quantities of lilac flowers.

L. virgatum, an Eastern European plant, grows to about the same height as the latter, and it has a still more branching and elegant growth, with blossoms of a good, clear pink.

Few plants need so little attention as these Loosestrifes. Here they only have the dead stems cut away in late autumn, and with that attention they seem to go on interminably. improving rather than deteriorating as the seasons pass. Some of the finest specimens of L. salicicaria roseum that I have seen were growing with their roots actually in shallow water, winter and summer. *J., Ro Wen. Taly Cafn, North Wales.*

PARNASSIA PALUSTRIS.

The common Grass of Parnassus is a very elegant plant for the bog garden and valuable on account of its late flowering. It forms close tufts of foliage, the radical leaves being cordate and the cauline ones stem-clasping. The flowers are white marked greenish and they have pellucid veins. *T.*

FLOWER GARDEN.

KIRENGESHOMA PALMATA.

This curious Japanese plant has been "out" for a good many years, but it is still uncommon, and this is odd, for it seems to be perfectly hardy in a free soil, is very unique in appearance and habit and an excellent subject for a partially-shaded woodland corner or mixed border.

K. palmata is an herbaceous perennial of some eighteen inches in height, with large, bright green, vine-like leaves and polished stems of a dark brown, approaching ebony. The growths, which appear in spring, are liable to being cut back by frost and they are beloved by the early slug. But they generally make a triumphant recovery from attack by either of these foes, and a sturdy clump, having made a handsome mass of foliage, will break into flower about the end of August, or it may be later.

The blossoms are in loose, terminal sprays, first the buds, like yellow acorns in cups of dark olive green, and then the long-rayed, Composite flowers which, though they promise great things, only partly open, retaining the shuttlecock shape to the end. That end often comes abruptly, as K. palmata is very sensitive to autumn frosts, however slight. At their gentlest touch the leaves become a clear yellow, and in a day or two nothing remains but the black naked stems. Though the flowers of this queer plant are in a sense disappointing, there is something in the soft nankeen of their clustered, drooping rays which blends very harmoniously with the hues of autumn. *A. T. J.*

GEUM FIRE OPAL.

Three years ago, I was shown a Geum which was of so brilliant a colour that our old favourite, Mrs. Bradshaw, appeared to have lost its glow when placed beside it. This was Geum Fire Opal, a remarkably appropriate name, for the flowers are the colour of fire, and have that restless, changeable luminosity one finds in a well-set opal. Size, form, length of stem, freedom—all are the equal of Mrs. Bradshaw, and no better recommendation is required, so far as these points are concerned.

From a catalogue just to hand, I discover that Geum Fire Opal has found its way into the hands of a continental nurseryman who is one of the keenest judges of a good plant. There is no need to mention his name because he grows for the trade, and British nurserymen will be able to obtain plants to order. My one hope is that this magnificent Geum will be kept absolutely up to standard, and that no seedling stock which varies in the slightest degree will be sent out as Fire Opal. I have seen many very different flowers masquerading under the name of Geum Mrs. Bradshaw simply because they came from the seeds of plants which were probably themselves seedlings from true stock. Geum Fire Opal is too good a plant to spoil; a bed of two dozen strong plants should be a gorgeous sight. *A. J. Macself.*

POLYGONUM CYMOSUM.

This very fine Knot-weed is a most desirable plant for late summer and early autumn flowering; the almost erect stems attain a height of from two feet to three feet and are crowned by large panicles of pure white flowers. These latter are deliciously perfumed, strongly reminiscent of Hawthorn, and are very persistent. The foliage is large and handsome and of attractive colouring during a suitable autumn, but, unfortunately, the growth is very susceptible to frost, therefore, a somewhat sheltered position should be afforded this exceedingly handsome plant. The flowers lend themselves to many charming decorative schemes.

The requirements of the plant are simple, for it appears to thrive in any ordinary good soil; propagation is effected by division of the roots. *Ralph E. Arnold.*

HEUCHERA TIARELLOIDES ALBA.

For general effect in the herbaceous border or rock garden, this pretty hybrid is difficult to excel. During the early spring, from tufts of heart-shaped leaves, spring numerous, slender scapes, from twelve to fifteen inches high, bearing dainty, bell-shaped, flowers of a delicate blush white.

STOKESIAS.

Since early in July, Stokesia cyanea and its varieties have been in flower in the herbaceous borders. Stokes's Aster is a late-flowering species found in South Carolina, and has flowers of a bright lavender blue carried on a freely-branched stem, from twelve to eighteen inches tall, the flowers being from two-and-a-half to three-and-a-half inches across. The improved varieties are not only earlier-flowering, but have larger flowers and produce blooms with greater freedom over a long period, continuing well into October. A. c. praecox purpurea is of special value for the border as it bears large, Aster-like, purple-blue flowers from July until the end of September, and sometimes into October. The variety alba, pure white, and the variety rosea, delicate rose, are both very desirable and admirably suited for the border or rock garden. Propagation is effected by division, in spring. All the Stokesia are well adapted for cool greenhouse or conservatory decoration. *W. L.*

COLLOMIA COCCINEA.

This hardy annual is uncommon, both in gardens generally and in the unusual deep brick-red colour of its flowers. That it has not been more often grown may be due to a lack of acquaintance of the great improvement that has been effected by skilful culture and selection by our chief seedsmen. The original plant, when introduced from Chile, was of somewhat weedy habit, but, as will be seen from the illustration (Fig. 72), its present-day descendants are of distinct garden value. Collomia coccinea is of dwarf, sturdy habit, and may be had in flower from June to October if seeds are sown out-of-doors early in March and at occasional intervals for succession, though the individual plants continue in flower longer than the average dwarf annual. It is of easy culture, and in addition to its uncommon colouring, is distinct in the habit of producing leaves which frequently have the points divided into two or three sharp segments of unequal length. *A. C. B.*

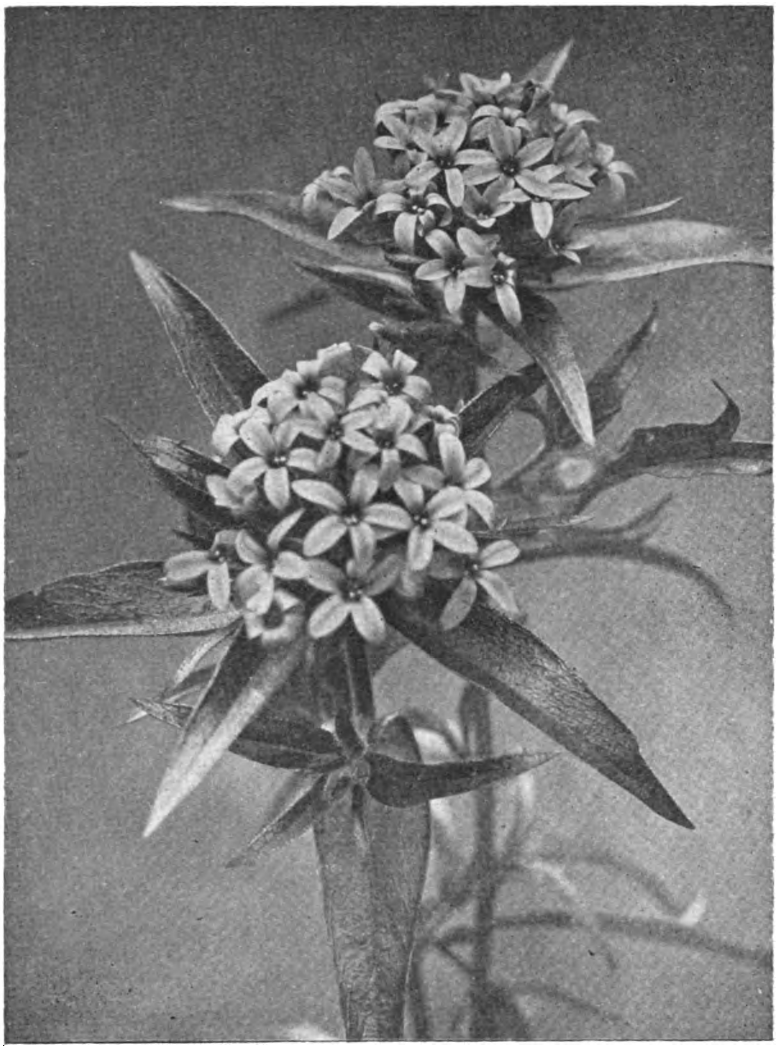

FIG. 72.—COLLOMIA COCCINEA.

COREOPSIS GRANDIFLORA PERRY'S DOUBLE.

This double form is very effective at this season of the year, being invaluable as a border plant and for cutting for house decoration. The semi-double flowers are rich golden-yellow, produced on well-branched stems, and the plant is of the easiest culture. *W. L.*

TREES AND SHRUBS.

BETULA ALBA.

The Birch is one of the hardiest and most graceful of our native deciduous trees. In the north it is one of the commonest species, and in company with the Rowan-tree, Pyrus Aucuparia, makes lovely pictures at all seasons, notably in the beauty spot near lone Glenfinlas, "where twines the path, close where the thundering torrents sink." The Birch is not a long-lived tree; it revels in a light, sandy loam, in which it quickly attains its maximum size. Isolated specimens or groups of a few trees are rarely out of place in the pleasure grounds or in the more open contiguous park. The Birch is the Lady of the Woods.

By the river Dwina, at Archangel, there are parallel rows of Birch trees extending for over half-a-mile, forming a natural pergola and a popular promenade. In Russia the Birch is a tree of considerable economic importance, millions of the articles in daily use being made from Birch wood. The bark is more durable and of greater value than the wood as it is impermeable to water and used for roofing houses, the making of light canoes, and as a substitute for paper. The bark and leaves are used as fodder, for dyeing and tanning, and also medicinally. The leaves of the occidental species, B. lenta, are infused after the manner of tea.

The pleasant odour of Russian leather is due to the Birch oil used in its preparation. The fresh sap is used as a beverage, and by fermentation is converted into beer, wine and vinegar, while the bark is sometimes ground and used as an article of diet.

There are many forms of B. alba differing from the type in robustness and style of growth, and in the colour and size of the foliage; there are pendulous and fastigiate varieties, and in one, B. a. macrocarpa, the catkins are twice as long as those of the type. The catkins appear in early spring, simultaneously with the bursting of the foliage, and the light twigs then make a pleasing decoration for the home. *Fred. W. Jeffery.*

TREE PLANTING.

It is astonishing, nowadays, to see the mistakes that are made in planting trees of all sorts and sizes. One reason probably is the number of workers who have had no experience as gardeners. In suburban districts one meets "gardeners" who in pre-war days belonged to professions far removed from horticulture. Even so, it is quite apparent that a large percentage of trees planted to-day run a great risk of dying early. The most common sin is planting too deeply. Too much labour is spent in excavating a large hole, and the unlucky Conifer (it may be) has its roots buried deep in the inhospitable clay or chalk.

We may learn much from landscape gardeners of even the seventeenth and eighteenth centuries. The great Lebanon Cedars in these grounds are planted on mounds. A few years ago we had occasion to move completely a very large and old Corsican Pine, and it was found to have been planted on the soil and banked up. Four great roots, almost horizontal, were cut, and the tree then fell of its own accord; levelling the mound was a far more difficult business.

A tall Peach (standard trained) was necessary sixteen years ago in an early house. The one obtained was hardly tall enough, but we planted *on* the border and banked up the soil. That tree has never once failed us. I contend that planting near the surface and firmly treading the soil is a surer and more satisfactory method of planting than the more laborious and costly process of deep excavation. Further, one may notice the natural growth of seedlings of Ash, Sycamore, etc. The seeds are just covered by leaves, yet they germinate; a tap-root certainly may go down deeply, but very many feeding roots keep near the surface, whereas if the whole were taken up and replanted deeply the foraging roots would have a poor chance. *G. W. Stacey.*

RHODODENDRON AZALEOIDES.

This hybrid Rhododendron has a special claim to attention, inasmuch as it is one of the last to flower, not expanding its large trusses of pretty, white, rosy-tinted blossoms until the end of June or even later. Moreover, it is a dwarf shrub, averaging no more than perhaps four feet in height, of shapely habit, with evergreen leaves of a dark, glossy green hue. The flower trusses may contain so many as fifteen to twenty blooms, and these are deliciously fragrant, hence the names, R. odoratum and R. fragrans, by which it has been known.

Reliability in blooming is another of this Rhododendron's good points, and it is quite happy in any lime-free loam which is well-drained and not too dry. The supposition that this shrub is a hybrid between a deciduous species (or Azalea) and an evergreen affords it an additional interest. What its parents were still appears to be a matter of doubt, but that matters little to the average amateur who has in this little shrub a Rhododendron of singular charm and undeniable quality.

BERBERIDOPSIS CORALLINA.

This remarkable evergreen twining shrub has been growing here on a north wall for a good many years and, like not a few other Chilean subjects, it undoubtedly has a preference for such an aspect. Though it has been exposed on several occasions to 20° of frost, it has suffered no injury, and that, I think, may justify one in considering it hardy enough for most places. I grow B. corallina in ordinary light loam with a little leaf-mould added to keep the rooting-medium cool in summer; it is also said to do well in sandy peat.

B. corallina is believed to have some connection with the Barberries, and this is suggested by its hard and horny, slightly spiny leaves, which have a glaucous sheen; also by the flowers. These latter, produced at the end of July or August, in bold racemes, are almost globular and consist of a dozen or more fleshy segments in a vivid, glossy-crimson, this colour also pervading the long stalks upon which the flower hangs with its elegant, Fuchsia-like droop. Being a vigorous climber, B. corallina will ramble up a trellis, wire-netting or other support of the kind, but as it is apt to grow rather leggy, I always think it better with a companion, such as one of the dwarfer Clematises.

CINERARIA LOBATA.

Sometimes listed as Senecio lobata, this little shrub may not be a subject of first-rate merit, but it has, nevertheless, an undoubted attraction for most gardeners who have grown it. A loose-habited, slender, rather sprawling shrublet, it is furnished with rounded, neatly-lobed leaves of a peculiarly fresh and glossy green. The flowers, like those of so many of its kind, are a rich yellow, and there is a quaint simplicity about their few and unevenly disposed rays which never fails to appeal. These long-stalked flowers, moreover, which have such an effective setting against the cheerful verdure of the foliage, are produced in unbroken succession from spring to late autumn, an achievement which is by no means common in the shrubby Ragworts.

C. lobata is a plant for the front of the border or the rock garden. It will thrive in the poorest of gritty soil, enjoys full sun and is quite reasonably hardy. Should there be any doubt of it withstanding the winter, cuttings are so easily struck in early autumn that one may always winter a reserve stock in a cold frame.

SOLANUM CRISPUM VAR. AUTUMNALE.

This beautiful evergreen shrub does not appear to differ from the typical S. crispum, save that it has a much longer flowering season. Commencing to bloom in early June, it maintains an unbroken succession of its lovely, orange-centred, lavender-blue flowers until the first frost of autumn, and during the later months of that period the flowers are usually larger, more numerous and of an even better colour than they are in summer. In this district both the type species and the variety referred to will often do well in the open, but the shelter of a wall is generally desirable, for the branches are liable to become broken by wind. I find these Solanums quite as hardy as any other Chilean subjects; indeed, they are a good deal more frost-resisting than some, but they are growing here in a poor, gritty soil, which ensures free drainage. *N. Wales.*

HYPERICUM PATULUM FORRESTII.

This dwarf shrub is one of the most valuable for flowering from July onwards. Many of the plants were cut back by frost during last winter at Wisley, but it breaks freely from the old wood, and even if cut to the ground level, will send up young growths from the base. As it is inclined to become weak as time passes, it becomes necessary to renew the stock by means of cuttings, which root freely under a bell-glass. To secure the best results, H. patulum Forrestii should be fairly hard pruned after the fear of spring frosts is past, removing all weak and worn-out wood to encourage the plants to make strong growths, each of which will be terminated during late summer and autumn by a cluster of beautiful yellow flowers and, later, by brilliantly coloured seed vessels.

To see this shrub to advantage, grouping, where space is available, should be adopted, rather than planting isolated specimens. It is also easily raised from seeds, which are freely produced and with good treatment the seedlings will flower in their second season. *R. F.*

ORCHID NOTES AND GLEANINGS.

DENDROBIUM THWAITESIAE.

(See Supplement Plate.)

This beautiful yellow hybrid Dendrobium, which forms the subject of the Supplementary Illustration presented with this issue, is the result of crossing D. Ainsworthii with D. Wiganiae. It was first raised in the collection of Mr. R. G. Thwaites, and received the R.H.S. Award of Merit on March 10, 1903. The best form, D. Thwaitesiae, Veitch's variety, was first shown under the name of D. Pirene, and received the R.H.S. First Class Certificate on April 5, 1904. D. Wiganiae first flowered in 1896, being the first hybrid in which an attempt had been made to introduce the yellow colour of D. signatum into the D. nobile family.

This hybrid was also raised and flowered in the collections of Sir F. Wigan, Sir Trevor Lawrence and Messrs. J. Veitch and Sons, all nearly at the same time.

Although D. Wiganiae did not give any extraordinary results from the inter-crossing with D. signatum, it is another illustration of the benefits sometimes attained by again crossing even a hybrid with another which contains in its parentage the colour aimed at. The plants shown by Baron Schröder at the Royal Horticultural Society on April 7 last will doubtless be the means of reviving interest in these most beautiful plants. At one time Dendrobiums were general favourites, and were grown in most gardens of any pretensions.

D. Thwaitesiae has again been crossed with D. nobile, and the progeny is named D. variabilis, but the results are not remarkable, although the best parent was used, viz., D. nobile nobilius. D. Thwaitesiae like the majority of the members of this section, is of easy culture, and requires a warm, humid atmosphere whilst making its growth, and a long dry, moderately cool temperature whilst at rest, but on no account must the pseudo-bulbs be allowed to shrivel.

The plants delight in a clean, fibrous compost and resent large receptacles; they should be grown suspended close to the roof-glass. With some growers, when the plants attain a certain size, the plants are liable to collapse, hence the necessity for continual propagation, which is best carried out by removing some of the older pseudo-bulbs when repotting, and cutting them into lengths two nodes or joints to each piece, and inserting them in pots or pans filled with clean silver sand, and placing them in a warm propagating frame, when most, if not all, will soon make young growths; when these commence to make new roots they should be potted into small pots, using a compost composed chiefly of live Sphagnum-moss. By this means young, healthy stock may be maintained; and as strong plants produce much finer flowers than old ones, it is always advisable to propagate some each year.

There are other yellow Dendrobiums raised from D. signatum, and D. Wiganiae, in fact each has been used twelve times, but none of the hybrids has given such startling results as the one under consideration. *J. T. B.*

COELOGYNE.

Plants of Coelogyne cristata are now making rapid growth, and well-established specimens need copious supplies of water at the roots whenever they show signs of becoming dry; they will also be benefited by occasional waterings with a weak liquid cow manure. Plants that have been re-potted recently should be watered rather sparingly until after the new roots have become well re-established in the compost, and during the first season after repotting should be afforded only clear water. These conditions should be maintained until the pseudo-bulbs are matured and the flower scapes developing, when the supply of water should be gradually lessened. The surroundings should never be allowed to become dry, and the plants should never be exposed to bright sunshine and a dry atmosphere. *C.*

MESEMBRYANTHEMUM.

(*Continued from p.* 89.)

10.—DIDYMAOTUS, N. E. Br.

Succulent stemless perennial, very dwarf, Leaves opposite, 2, or when making a new growth 4 to each plant, those of each pair equal in size, short, broad and very thick, ovate, not dotted. Flowers lateral, one on each side of the plant from the axils of the old leaves, bracteate. Calyx 6-lobed down to its union with the ovary. Petals numerous, in about 3 series, free, linear. Stamens numerous, erect, not collected. Stigmas 6, subulate, acute, lacerate or plumose on the inner surface, erect; style none. Ovary partly superior or shortly conical at the top, shallow, convex beneath, 6-celled; placentas on the floor of the cells. Capsule slightly convex, with 6 gaping ridges on the top, flattish beneath, with 6 valves and cells; valves with rather distant and slightly diverging expanding-keels and broad, membranous, acute, marginal wings; cells imperfectly roofed with gaping, membranous flexible cell-wings, no tubercle at the opening. Seeds very numerous in each cell, minute, globose-ovoid, with a nipple at one end, smooth.

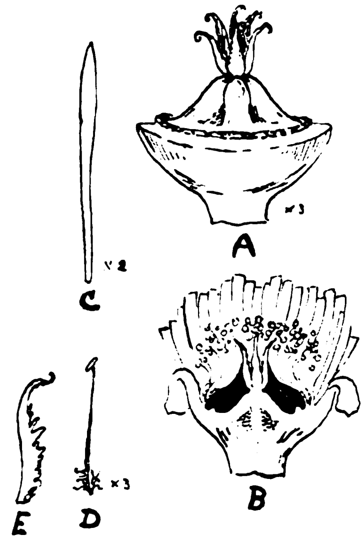

FIG. 73.—DIDYMAOTUS LAPIDIFORMIS.

A. Entire ovary and stigmas; B. Section thorough flower; C. Petal; D. Stamen; E. Stigma; all variously enlarged.

Species 1, native of Ceres Division in South Africa.

The name is derived from the Greek, *didymos*, twin, and *aotos*, a flower, in allusion to the pair of flowers, one borne on each side of the plant.

D. lapidiformis, N. E. Br. (Figs. 73, 74, 75).—Plant about 1½ inch high, stemless. Leaves normally two to a plant or four when making a new growth, opposite, united at the base, up to about 1 inch long, 1–1¼ inch broad and ¾-1 inch thick, with the flat face broadly rhomboid-ovate in outline, shortly and rather abruptly acute, strongly keeled on the back, smooth, glabrous, grey-green, reddish-brown, or purplish tinted, and covered with a glaucous film, not dotted; when the plant is at rest the leaves are more or less closed together. Peduncles lateral, one on each side of the plant, produced from the axils of the old pair of leaves; very short, bearing at first a much compressed obcordate or shortly 2-lobed or notched fleshy body keeled down each side, formed by a pair of stout bracts fused together for most of their length; from this body the flower arises after the resting period is over and the plant begins to develop a new pair of leaves. Pedicel about 6–10 lines long, 1½ line thick, terete, smooth, glabrous, green. Calyx subequally 6-lobed, glabrous, ovary-part shallow, convex beneath; lobes 3½–6 lines long, 2½–3½ lines broad, deltoid-ovate or ovate-oblong, obtuse, spreading. Corolla about 1½ inch in diameter, opening about 3 p.m.; petals numerous, in about 3 series, free, 4–7½ lines long and about ⅓-line broad, cuneately linear, obtuse or subacute, white or white tinted with rose. Stamens erectly spreading, not collected into a bundle; filaments bearded at the base, dark rosy; anthers yellowish-white. Stigmas 6, erect, with recurved tips, stoutly subulate, tapering to a fine acute point and plumose or lacerate on the inner face; style none. Ovary conical and 6-grooved on the top, shallow, 6-celled. Capsule 5–7 lines in diameter, slightly convex and with 6 gaping ridges on the top formed by the separated upturned edges of the 6 valves, flattish beneath; valves about 2 lines long and 2½ lines broad, deltoid, pallid within; expanding-keels orange-brown, rather distant and slightly diverging, with rather broad, membranous, pallid wings about as long as the valve and ending in acute points. Cells imperfectly and flatly roofed with gaping, membranous, flexible, pallid cell-wings that easily permit the seeds to escape. Seeds 200 or more (counted!) in each cell, about ¼-line long, obliquely pear-shaped, smooth, pale brownish, with a darker nipple.

Mesembryanthemum apidiforme, Marloth in *Trans. Roy. Soc. S. Afr.*, vol. IV, p. 137 and 138, with fig.

Ceres Division: Ceres Karoo, Marloth!

This interesting plant in general appearance has much the habit of Pleiospilos Bolusii, and would seem allied to that genus, but the structure of its flowers (Fig. 73) and fruit is altogether different, and its mode of producing its flowers (one on each side of the plant) is quite distinct from that of any other member of this large group of plants known to me.

D. lapidiformis seems to be a difficult plant to cultivate. Dr. Marloth informs me that he discovered it in the Ceres Karoo "about 50 miles from the nearest railway station," and as it resembles the stones it grows among it is not very easy to find when out of flower, for he states at the place above quoted, "In nature, the leaves are of a brownish-red colour and closely resemble the angular pieces of brown shale and sandstone between which the plants grow. As they are half buried in the ground they can be detected only with difficulty, even in localities where their occurrence is known." The plant flowers in the South African spring (September and October), and at the beginning of summer "the old leaves have shrivelled up, the new pair has assumed the colour of the surrounding stones, and the plant remains dormant until the winter brings rain again." As the rainfall of the region it inhabits is said to be only three or four inches per annum I suspect that our moister climate does not suit it very well.

Dr. Marloth sent to me two plants of it, a dead flower and a ripe fruit. The plants lived about twenty months, each produced a fresh pair of leaves, and one of them a pair of dormant, flowering peduncles, before they died. I raised a number of seedlings, but they have gradually all died except one out of a number I gave to Kew Gardens, and Dr. Marloth informs me that his stock of the plant (collected at the same time as those he sent to me) grown at Cape Town have also all died. So that it is evident that it is not an easy plant to cultivate, even in its own country, away from its native habitat. The plant quickly dies if given too much water.

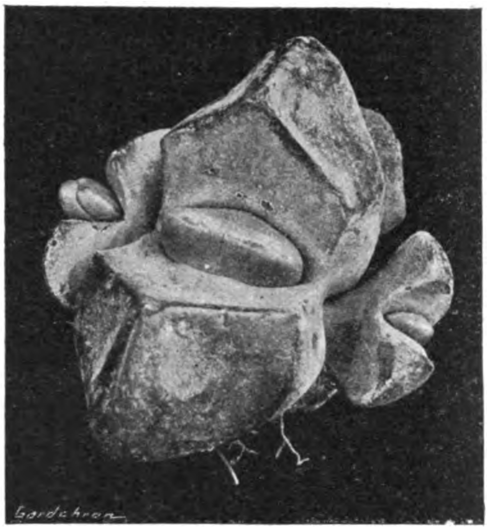

FIG. 74.—DIDYMAOTUS LAPIDIFORMIS.
From a photograph by Prof. I. B. Pole Evans.

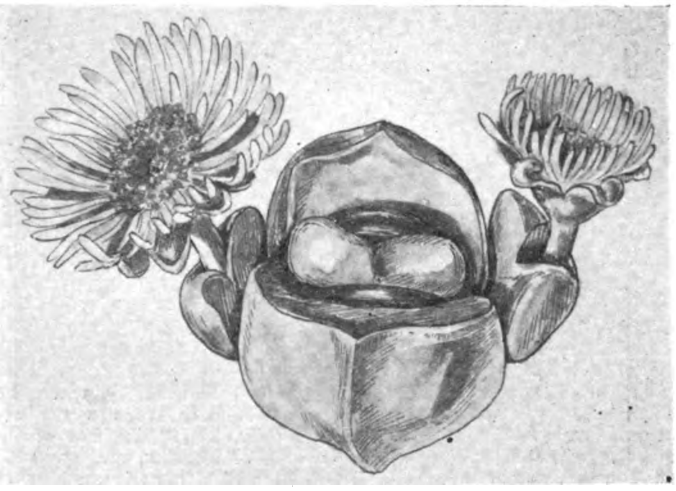

FIG. 75.—DIDYMAOTUS LAPIDIFORMIS IN FLOWER.

The manner in which the young flower-buds remain hidden in the body of the bracts, dormant and utterly invisible for months, is very remarkable. It is only when the plant is producing a new pair of leaves and a new pair of flowering peduncles for the next season that the flowers hidden in the old bracts make their appearance. I do not recall to mind a similar manner of flowering in any other genus of this or any other Natural Order of plants. In Fig. 74, the flower-buds are seen to be just emerging from the base of the notch in the bract-body on each side of the plant, and the plant itself is seen to be forming a new pair of leaves, on each side of which a new pair of flowering-bracts is also being formed, but they have not yet pushed their way through the opening so as to be visible. Figs. 73 and 75 are from a drawing by Miss Page sent to me by Mrs. L. Bolus, keeper of the Bolus Herbarium, Cape Town. *N. E. Brown.*

(*To be continued.*)

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CLASSICAL AND LEGENDARY GARDENS.

X.—Later Hebrew Garden Lore.

MUCH may be learned about the garden by a study of the Apochryphal literature of the Jews. Although the scene is laid in Babylon the story of Susannah is Jewish, and throws considerable light on the subject. Susannah, the daughter of Helkias, was the wife of a rich Jew, Joakim by name, who dwelt in Babylon during the days of Daniel. So runs the legend and thus we determine the age. Joakim "had a fair garden joining unto his house," (Ver. 4), in which his beauteous wife (Ver. 31) was wont to walk when the people departed from the house at noon. We learn that it was enclosed, and that admission was gained thereto by doors, of which there were at least two, since people could enter the garden from without as well as from within the house.

In the Septuagint the word here employed for garden is *Paradise*, without an adjective, so that the translation 'fair garden' is intended to show that the word Paradise means something more than a mere enclosure. It was possessed of trees and fountains, which is exactly what the word implies. Two trees are mentioned, and presumably other kinds existed, for Daniel convicts the accusers of Susannah of lying when one says he saw her under a Mastic tree, while the other asserts that it was a Holm. The Greek word for Mastic is *Schinos*, and is the equivalent of the Latin *lentiscus*. It is worthy of a little study. Evidence goes to show that the tree intended is Pistacia Lentiscus, L., which was first brought under cultivation in this country in 1664 (*Botanical Magazine*, t. 1967), and belongs to the Order Anacardiaceae. Its near relative, Pistacia vera, which supplies us with the Pistachio nut, is a native of the warmer parts of Central Asia, while another species of the same genus is known as the Terebinth. The Mastic tree attains a height of ten to twelve feet, and the fruits, unlike the Pistachio, are dry drupes borne on short, stiff panicles. Dr. Post informs us that it grows in thickets all around the Mediterranean to a height of 2,500 feet. The gum exudes in the form of tears, and is greatly in request by women and girls as a chewing gum, partly because it makes the breath agreeable, and partly because it is supposed to preserve the teeth and gums. It is an astringent, and is used to check discharges from the mucous membranes. There is a play on words in the story, as we read it in the Greek. Daniel asks the first accuser of Susannah under what tree he saw her. "Under a Mastic (*Schinos*)," is the reply. "Right well hast thou lied," replies the prophet, and "now the angel of God shall cut thee (*schisei*) in two" (Ver. 55).

The other tree is the Holm, named in the Greek *Prinos*, the Latin *Ilex*, Evergreen or Holm-Oak. This is too well known to need description. It is a native of the south of Europe, and may have been known to the Jews, though whether it was grown in Babylon at the time of Susannah is doubtful. The writer was probably familiar both with the Mastic and the Ilex, and places them in the Babylonian Paradise on that account, because he had been used to the presence of such trees in Palestine.

The garden of this wealthy Jew also had fountains, since his wife instructed her maids to bring her oil and washing balls, and shut the garden doors that she might bathe there. The oil was that of the Olive, and one would like to think that the "washing-balls" were the fruits of a saponaceous tree such as Eastern peoples have used for ages; but the word *smegma*, which comes from *smao*, to smear or anoint, does not lead us to that conclusion. Susannah's garden, however, was in every way what an Oriental Paradise should be—a private garden with shaded paths, arbours, retreats, fountains, and by inference, filled with fragrant flowers and luscious fruits. Let us see how far this idea is supported by other references to the Hebrew Garden in the Apocrypha. Eastern gardens were of necessity provided with streams, conduits, fountains, or other water supplies, since they could not othewise remain fertile. Hence the allusion in *Ecclesiasticus* (xxiv. 30). "I came out as a stream (or canal) from a river, and as a conduit into a garden. I said, I will water my garden, and will water abundantly my garden bed; and lo, my stream became a river, and my river became a sea." Here again the word for garden is the Old Persian Paradise in the first instance. It is accompanied, however, by two Greek terms, viz., *Kêpos*, a garden (Ver. 31), and *prasia*, a garden plot. These words stil live in modern Greek, either in the old form or in a slightly modified dress. Thus *Kêpári* is a garden and *prasia* a garden bed. The latter word is of great interest, concerning which the old writers on plants, such as Theophrastus (*Hist. Plant.* iv., 4), Dioscorides (iv. 17), Plutarch and others have many things to say. It is of frequent use in the Old and New Testaments, often in reference to things ordered or arranged, like Leeks in a garden plot.

The same writer uses the word garden (paradise) figuratively when he says (xl. 17) that "Bounty is as a garden of blessings," and (Ver. 27), "The fear of the Lord is as a garden of blessing, and covereth a man above all glory." There is another reference in the Apocrypha which is striking and significant. In *Baruch*(vi. 70) we read that "As a scarecrow in a garden of Cucumbers that keepeth nothing, so are the gods of wood" which the heathen worship. One could linger long over this interesting allusion. There is, first, the unexpected mention of a scarecrow! This useless production of human ingenuity "that keepeth nothing" has to do with witchcraft and "fascination" or the evil eye. It was named in Greek the *probaskanion*, or that which acts against witchcraft, spells and fascination. If we turn to the margin of our Revised Version we shall find (*Jeremiah* x. 5) this text from Baruch quoted, and shall learn that certain scholars think allusion is made here also to a dummy or scarecrow in a garden of Cucumbers. This will lead our thoughts to *Isaiah* (i. 8), where we again read of the Cucumber garden, and the watchman's lodge. The scarecrow, presumably, acted when the keeper was absent; and in some cases, perchance, was equally useful. If we may trust the students of folklore these scarecrows were provided, not so much to ward off birds and beasts but evil spirits as well, and it is a question which of the two—the keeper or the scarecrow—would be the more effective agent.

Then there is the word translated "a garden of Cucumbers." We find, indeed, two terms one in the text (*sikuêratos*), and another (*sukêeratos*) in the margin. We cannot appeal to the Greek translation of *Isaiah* i. 8 to help us in deciding which is the better reading, because the Septuagint has "a tent in a vineyard" instead of "a lodge in a garden of Cucumbers." It is a choice between the Fig and the Gourd. *Sikuêratos* would be based on *Sikua* or *Sikue*, "a fruit like the Cucumber or Gourd, but eaten ripe," as Liddell and Scott inform us; related to Sikuos the common Gourd or Cucumber. But *Sukêeratos* would call up *Sukea*, *Sukee* or *Suke*, from *sukon*, a Fig, and so we should read "a scarecrow in a Fig orchard." There seems little to choose between the one and the other, since both Fig gardens and gardens of Cucumbers were alike familiar. Figs, as we learn from the New Testament, were sometimes grown in vineyards, in order that they might have the best attention and the richest soil. But possibly Cucumbers were grown among vines as well, seeing that in *Isaiah* (i. 8) we have reference to a cottage in a vineyard and a lodge in a garden of Cucumbers. Gourds, Cucumbers and Melons rambled and scrambled over poles, lattice work and trees just as vines did, and might well be grown together. The conclusion seems natural, that in the days when the Apocryphal books were written the Hebrews were great gardeners. They had their parks and paradises, their gardens known by the native name *Kêpos*, their vineyards and Oliveyards, their Fig gardens and their Cucumber plots; they understood the art of irrigating, they laid out their ground in beds, they walled in their enclosures, and they protected their fruits by the use of the scarecrow. *Hilderic Friend.*

PLANTS NEW OR NOTEWORTHY.

EREPSIA TUBERCULATA, N. E. Br.

As the characters of the genus Erepsia are embodied in my key to the genera into which I have divided the genus Mesembryanthemum, on page 433, vol. LXXVIII (1925), of *The Gardeners' Chronicle*, I need here only mention that it differs from Mesembryanthemum by the calyx being produced above its union with the ovary into a short tube, and by the stamens being hidden under a mass of inflexed staminodes and bent down into the short calyx tube, instead of being erect and very conspicuous. Fuller details of this genus will be given hereafter. When out of flower plants of Erepsia cannot be distinguished from those of the genus Mesembryanthemum, yet, when in flower, they can be instantly recognised

The following species was raised by Mrs. S. Sexton, at Plymouth, from seeds that were given to me by Mr. N. S. Pillans, of Cape Town. The plant sent to me by Mrs. Sexton flowered with me all last autumn, and as the flowers remain perpetually open, day and night, for about two weeks, after they have once expanded, it is quite a desirable decorative plant. It is of lax habit, with long, slender stems, and this character, together with its very distinctly tuberculate calyx, readily distinguishes it from all the rest of its allies.

Erepsia tuberculata forms a laxly-branched bush, 1–2 feet high, with ascending stems and alternate branches $\frac{3}{4}$-$1\frac{1}{2}$ line thick, having internodes 1–3 inches long, compressed and two-edged, smooth on the young parts, at first green, soon becoming brown, and with age becoming greyish at the base on native plants.

Leaves erect or ascending, slender, 8–16 lines long, or the uppermost shorter, ¾-line thick, equilaterally linear-trigonous, not dilated at the keel, acute, greyish-green or tinted purplish, not glaucous, with prominent pellucid dots.

Flowers solitary or two at the end of each branch. Pedicels of the terminal or primary flower 6–14 lines long, or longer on cultivated plants, and of the secondary flowers 3–7 lines long, tuberculate just below the calyx, otherwise smooth and glabrous, without bracts. Calyx unequally 5-lobed, very prominently and rather coarsely tuberculate, green; lobes 1–3½ lines long, 1–1½ line broad at the base, subulate, acute, the inner with membranous margins. Corolla 12–16 lines in diameter, remaining open day and night for about 14–16 days, not scented; petals numerous, rather lax, in one series, 4–7 lines long, ¼–⅓ line broad, linear-spathulate, tapering into a slender stalk, obtuse, bright rosy-purple, with the basal part white. Staminodes very numerous and densely crowded, quite concealing the stamens; the outer spreading, 2–3 lines long; the inner shorter and connivent, with recurved tips, white, with a faint yellowish tinge. Stamens numerous, very short, scarcely ⅓-line long, incurved-pendulous, light yellow. Stigmas 5, minute, papilla-like, greenish.

Ovary convex at the top, green. Capsule (unripe and not seen expanded) about 5 lines in diameter, 5-celled; placentas on the outer wall of the cells. Seeds about 10–12 in each cell, ⅔ line in diameter, compressed, minutely tuberculate, blackish-brown.

South Africa: on the Cape Flats, near Cape Town, Pillans! *N. E. Brown.*

GARDEN NOTES FROM SOUTH-WEST SCOTLAND.

Hydrangea vestita (Fig. 76), although introduced from the Himalaya more than a hundred years ago, is very seldom seen, except in botanic gardens, yet it is too fine a subject to deserve neglect. It requires plenty of room to do itself justice. When it arrived here, some twenty years ago, it was planted in a flower border, whence it soon had to be ejected and was set in a woodland glade, where it now stands twenty-three feet high, well-set with flat corymbs of the usual Hydrangea type, the outer, sterile florets being large and showy. In the *Kew Hand List*, this fine shrub or small tree is not entered as a distinct species, though H. vestita var. pubescens, Maximowicz, is given as one of the synonyms of H. Bretschneideri; but Mr. Bean recognises the two forms as distinct species.

Another species of Hydrangea which flowers in August and continues until stopped by frost is the Chinese H. villosa. It forms a rounded bush about six feet high, clothed with lanceolate leaves four to six inches long, densely clothed with down on both surfaces. It blooms very freely, both fertile and sterile flowers varying in colour from violet to rose on different plants. Possibly it may not be hardy in cold districts, but it grows luxuriantly in the west, and self-sown seedlings spring up where the surface of the soil is suitable.

There are so many attractive species of Genista and Cytisus that discretion is required in making selection from them. Among them none is more brilliant than our native Broom, which, if it were a rare exotic, would be prized in the choicest collections. In the present month of August, Genista aetnensis makes a display as commanding as G. virgata from Madeira did in June. Both species, though natives of far warmer latitudes than ours, grow to great size, and flower profusely under British conditions. One of the most conspicuous objects in the Edinburgh Botanic Garden at the present time is a specimen of G. aetnensis, eighteen feet high, loaded with golden spray. It has more the habit of a small tree than a bush, showing several feet of sturdy stem.

The Privet family is generally better known for the disagreeable smell of its flowers than for its beauty; but Ligustrum sinense is a shrub of exceptional loveliness at this season, and may reach a height of twenty feet. Its snow-white plumes are borne in such profusion as well-nigh to eclipse the foliage, and the effect is enhanced when, as in a case before me to-day, Tropaeolum climbs to the topmost branches and bursts into scarlet flame.

The late Mr. Reginald Farrer, among the many prizes he secured for British gardens, never rendered better service to Lily lovers than in discovering Lilium centifolium (*Bot. Mag.*, t. 8960) in a cottage garden in Kansu. "Whether it will become a permanent and general acquisition for gardens in this country," wrote Dr. Stapf, in 1922, "remains to be seen." Subsequent experience with this truly splendid Lily goes far to justify a strong affirmative reply to the question, for it has shown itself possessed of a robust constitution, increases freely, both from bulbs and seeds, and fills with its trumpets the fortnight between the fading of L. regale and the opening of L. Sargentiae. Probably the flowers vary a good deal in colour according to soil and climate, because as we have it here there is very little of the green hue and more of the sulphur than is shown in the fine plate in the *Botanical Magazine*. *Herbert Maxwell, Monreith.*

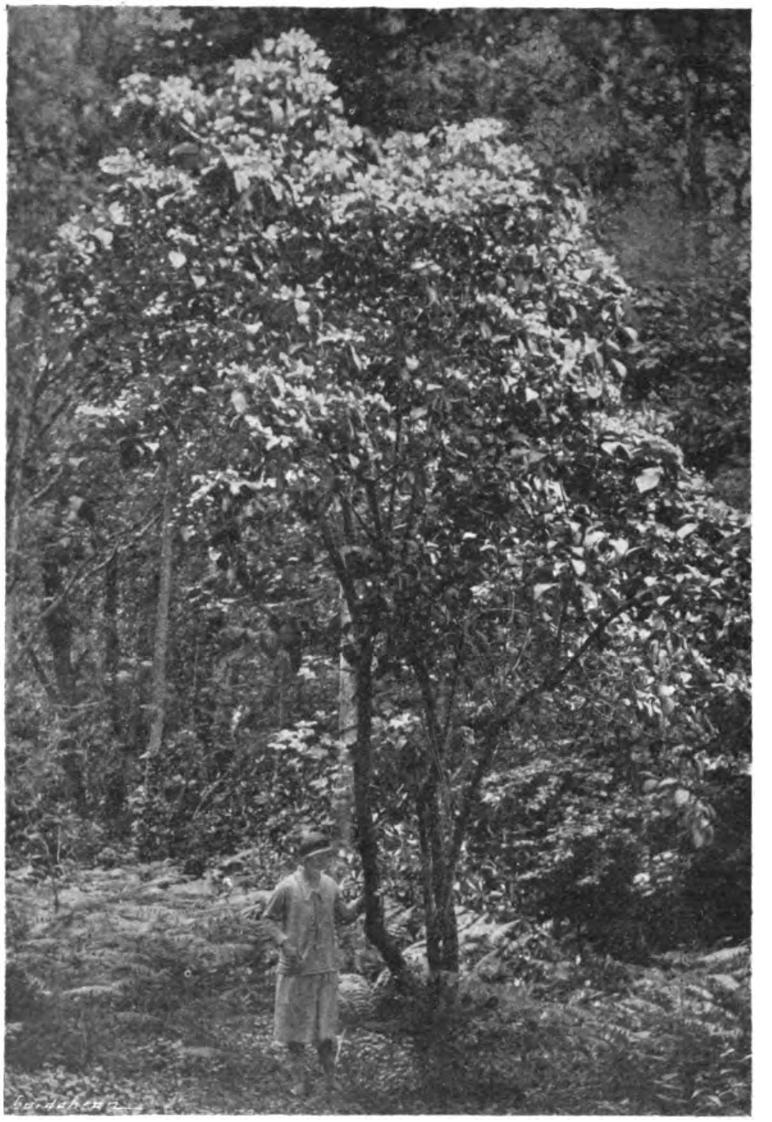

FIG. 76.—HYDRANGEA VESTITA AT MONREITH.

Twenty-three feet high.

NOTES FROM WISLEY.

In planting a garden, it should be the aim of the gardener not only to provide a continuous succession of interesting subjects, but also to arrange so far as possible for the maintenance of interest in each separate section of the garden. In the case of the Heath garden, this presents little or no difficulty, and by judicious selection of material one may keep it attractive throughout the year. Hence the growing popularity of this type of garden.

The Heath garden at Wisley is now full of colour, chiefly because of the flowering of very large patches of Erica ciliaris and Doboëcia polifolia (St. Daboëc's Heath). Erica vagans is also in flower and many of its varieties, among which is St. Keverne, with large, rose-pink bells. A similar shade is seen in the flowers of Erica cinerea, Knaphill variety, while white flowers occur in E. ciliaris alba and E. Tetralix alba var. mollis, the foliage of which has an attractive grey appearance. In addition to Heaths and Heathers, many kinds of Brooms are in flower in this part of the garden, such as Genista tinctoria, Spartium junceum, Cytisus hirsutus (Frivaldskyanus), a low-growing species, and the very graceful Genista nigricans var. Carlieri.

Shrubby Spiraeas are also conspicuous in the Field Garden, and one of the most ornamental is Spiraea discolor (ariaefolia), with drooping panicles of creamy-white flowers and foliage not unlike that of Pyrus Aria. Among the pink and red-flowered sorts now blooming are Spiraea expansa, with flat, rose-pink corymbs, S. Menziesii Billiardii, which has grown to a height of about seven feet, and many good varieties of Spiraea japonica. A dwarf hybrid barely six inches high, is Spiraea Foxii, with crimson flowers and intensely green leaves. Other rosaceous shrubs bloomingin the Field Garden include Potentilla fruticosa, Farrer's variety, and Potentilla ochroleuca, with pretty creamy yellow blooms, light green foliage and pink-tinged stems.

Considerable improvements and additions have lately been made to the herbaceous borders. These contain many plants which, if not uncommon, have failed to achieve the popularity which they deserve. An example is Hedysarum coronarium, known as French Honeysuckle, a handsome leguminous plant, which grows to a height of four feet to five feet and bears fragrant-flowered spikes of deep red. There are also white and pink-flowered forms which, however, are not so showy. A shrubby relative, H. multijugum, with purple flowers, is blooming in the field garden. This is a very good shrub for dry, sunny positions; it succeeds well in sandy loam. The habit of the bush is rather gaunt and the growth somewhat sparse; some growers resort to pegging down the lower branches in order to cause them to break freely and make a more shapely specimen.

Included in the herbaceous borders is a collection of Potentillas; among them are the pink-flowered P. nepalensis, P. californica, with yellow, Trollius-like blooms, P. Gibson's Scarlet, and P. argyrophylla atrosanguinea, with dark blood-red flowers, the centre of which is almost black. Patches of white are formed by clumps of Achillea The Pearl, by white Phloxes, such as La Neigo and Frau Antony Buckner, while silver and grey foliaged plants are seen in Artemisia discolor, A. borealis and Nepeta amethystina.

Some species of Liatris or Blazing Star, a North American Composite, in bloom, include L. spicata, L. pycnostachya and L. scariosa, all with purple flowers. Another Composite in flower is Senecio Veitchianus, with fat, yellow spikes and huge leaves. It is more suited to the bog garden, but may be planted at the back of a herbaceous border. Towards the front of the border are blooming Coreopsis verticillata, Catanache coerulea and Mimulus Bartoniana, a useful plant with pink flowers. In addition to Clematis recta, Clematis heracleafolia Davidiana, a blue-flowered herbaceous Clematis from China is flowering, together with Amenone japonica and Farrer's Anemone vitifolia with pink flowers, which, as its name suggests, has vine-like foliage.

The boggy portion of the rock garden is now largely occupied by the frail, white flowers of the Greater Water Plantain (Alisma Plantago-aquatica), while nearby is a group of the peculiar green flowers of Veratrum viride.

Elsewhere in the rock garden may be found the flowers of various species of Allium, such as A. nutans and A. carinatum, and pretty creeping plants in bloom, such as Stachys corsica and Myosotis Welwitschii.

In the alpine house many Campanulas continue to bloom, including the half-hardy C. Vidallii and C. fragilis, whose large, patent bells are sprawling over the sides of the pot. Other plants flowering in this house are Sedum primuloides, whose white flowers are seldom seen, and Anagallis tenella, the pink-flowered bog Pimpernel, which may be found growing wild on Wisley Common.

Work has now commenced on a new and up-to-date alpine house, sixty feet in length, which is being built near the existing structure. It should be completed by the end of September. The old alpine house has been a source of great interest and with the ever increasing popularity of alpines and their improvement, this new house is sure to prove one of the most popular features of the garden in winter and spring. *J. E. Grant White.*

GREENHOUSES AND TOOL-SHEDS.

Before building a greenhouse or even a tool-shed or similar building, every gardener, whether the owner of the property on which he intends to build or only the tenant, must consider his legal position with his legal rights and liabilities. If he is a tenant gardener he will want to know if he can claim compensation for the building as an improvement or if he can take it away with him at the end of the tenancy. If he is the owner he must find out what local bye-laws (if any) are in force regulating the erection of greenhouses or similar structures; or whether the person from whom he bought the property imposed any restrictions as to the using of it for certain purposes or as to building on it. Moreover, if he wishes to utilise a divisional wall in the erection of his greenhouse or shed, he will want to know if he can do so without fear of infringing anyone's rights.

The Rights of the Tenant.

Dealing first with the gardener who is only a tenant of the property on which he wishes to build, unless he is going to use his greenhouse or other building for trading purposes, and unless he enters into some agreement with his landlord to the contrary, he will not be able to take it down when he leaves unless it is merely resting on the ground and not permanently fixed to it. That is, if it is a "fixture" it will belong to the landlord. But things not further attached than by their own weight are not generally considered to be fixtures, thus tool-sheds and other buildings resting on, but not attached to, a brick foundation, or resting on the ground alone, though they may have become embedded in it by their own weight, do not come into this description, and can be removed by the tenant if they have been built by him.

As regards, however, those fixtures which are known as "trade fixtures," the test as to the removability of these is whether the removal is in accordance with the usual practice, is possible without injury to the landlord's property, and whether they can be removed without losing their character and value. Thus greenhouses and hothouses built by a market gardener or a nurseryman for the purposes of his trade can be removed by him as trade fixtures, but, as the Courts have decided, a conservatory, which is not used for trade purposes, built on a brick foundation, and attached to a house and communicating with it by windows cannot be removed at the end of the tenancy. Similarly a greenhouse built by a tenant and not used for the purpose of his trade, was also held not to be removable, as was a boiler built into the brickwork of the greenhouse, but the pipes of the heating apparatus attached to the boiler were held to be removable.

Therefore, when erecting a building of any size, a tenant gardener should always come to some agreement with his landlord, and obtain his consent to its erection and permission to remove it on leaving.

The position of the tenant of an allotment is rather different from that of the tenants of other land. In the first place, an allotment means any piece of land, whether attached to a cottage or not, of not more than two acres in extent, held by a tenant and cultivated as a farm or a garden or partly as a farm and partly as a garden. In the case of tenants whose land fall within this description they can claim compensation from their landlords for drains, outbuildings, pig-sties, fowl-houses and other structural improvements made and erected by or at the expense of the tenant, provided the previous consent in writing of the landlord has been obtained. Moreover, such a tenant has a right to remove improvements, provided he does so without damaging his landlord's property, and before the termination of his tenancy.

Further, in the case of the tenant of a market garden, under the Agricultural Holdings Act, 1923, he can remove any fixture or building which he has at his own cost erected or acquired and he can claim compensation in respect of the whole or part of an improvement which he has purchased, although his landlord has not consented in writing to the purchase.

Local Bye-Laws and Building Estates.

Before erecting an expensive building it is always as well to enquire at the office of the surveyor to the local authority of the district or at the office of their clerk, whether there is any bye-law in force restricting the erection of certain buildings in any part of that district, or whether the plans will have to be passed before it can be built. It is important to remember this, as if a building is erected which does not comply with the local bye-laws, it can be ordered to be taken down and re-built according to the existing regulations.

As regards building-scheme regulations and covenants, where an estate is set out in building plots and a general scheme is arranged, it is usual for the purchaser of each plot to covenant that he will not erect certain buildings on his land, or that he will only erect them after the plans have been approved by the surveyor to the estate; and also, and perhaps more frequently, he is required to covenant not to build within a certain distance of the road, and the distance for buildings such as greenhouses often differs from that laid down for the dwelling-house. This time it will be necessary to inspect the deeds to see what the regulations are, and even though the land was not purchased direct from the owner of the estate, but from a purchaser from him, this should be done, for it is usual in these covenants to stipulate that they shall not only bind the first purchaser, but also a purchaser from him.

The Divisional Wall.

When using a divisional wall for one side of a greenhouse or shed, the gardener must be sure that the wall in question belongs to him, or he must obtain permission from the owner to build up against the wall. Again, an inspection of the deeds is advisable as these will probably show to whom the wall belongs, if, however, the ownership of the boundaries is not referred to there, the wall is deemed to belong to the owner who has been in the habit of exercising acts of ownership over it. Repairing a wall and keeping it in repair or rebuilding it would be considered acts of ownership, and in the absence of evidence to the contrary, the wall would be deemed to belong to the owner who has done this, and he can build up against the wall if he pleases. *Harold Sharman.*

GOOSEBERRY CATERPILLARS.

There are at least three kinds of caterpillars which in some seasons and in certain localities damage the foliage of the Gooseberry. The life history of these three pests vary somewhat and much confusion exists amongst gardeners as to the several sorts and to the methods of control. As the method of control adopted for any insect pest depends to a large extent upon its life history, confusion of the particular kind of pest often leads to disappointment after control measures have been carried out.

Perhaps the most common pest of the Gooseberry is the Gooseberry Sawfly (Nematus ribesii, Scop.). The perfect insect appears fairly early in the season, just as the foliage of the host plant is about half developed. The female fly lays her eggs singly in little slits along the veins on the back of the leaves, twenty or thirty being generally laid on a single leaf. In about seven or eight days the caterpillars appear and begin at once to feed on the foliage; as a rule, they feed for a time all together on the leaf on which the eggs were laid, causing little pin holes to appear on the attacked leaf. After feeding together for a few days the parties split up and spread more or less over the whole bush. When there is plenty of food material the caterpillars seem to favour the half-developed leaves, but they will eat any green Gooseberry leaf when rations are short.

When fully fed the caterpillars drop to the ground and spin cocoons in the soil; these cocoons are very difficult to find because they are coated with particles of soil. There are several broods during the summer, but the last batch of caterpillars remain, as pupae, throughout the winter in the ground. The position of the pupae is always said to be in the top two inches of soil.

The caterpillars (really false caterpillars) of this pest may be distinguished from the other two mentioned below by the number of their feet. Miss Ormerod writes*: "They have a pair of sharp, horny feet on each of the three segments next to the head; the fourth segment is footless, but the following six segments are each furnished with 'sucker-feet,' or 'pro-legs,' like short, fleshy legs, and there is a similar pair at the end of the tail, known as the 'caudal pro-leg,' making twenty feet in all."

The best method of control with me has been spraying the affected bushes with nicotine. The spraying operations should be done as early as possible because nicotine wash is poisonous, and a period of at least three weeks should be allowed between spraying the bushes and picking the fruit. It should be noted that there is much overlapping between the different broods, and that it is possible to find sawflies, eggs and caterpillars on the bushes at the same time. This is important, because one spraying, no matter how well it is done, cannot give complete control.

The caterpillars of the Gooseberry sawfly feed also on the Red Currant, but I have only once seen them on Black Currants.

The second pest of the Gooseberry is the caterpillar of the Magpie Moth (Abraxas grossulariata, Stephens). In some districts this caterpillar is present in thousands, and often causes complete defoliation before midsummer, but in my experience its occurrence is local, whereas the sawfly is general. The moths appear in late July and August, and the eggs are generally laid in little groups on either the upper or lower surface of the foliage. The tiny caterpillars appear towards the end of the summer and feed for a short time only. Before the foliage drops from the affected bushes the caterpillars either spin themselves up in some of the foliage, or, more often, shelter in dead leaves at the bases of the bushes. In these positions they hibernate during the winter, coming out in spring and beginning to feed again. They are fully fed towards the end of May and throughout June, according to the locality. When fully fed they pupate on the bushes where they have been feeding; occasionally they wander off the bushes and pupate in any convenient place near-by, *e.g.*, an old stone wall.

The caterpillar may easily be distinguished from the larvae of the sawfly because Magpie Moth caterpillars are "loopers." It has three pairs of claw-feet near the head, and only two pairs of sucker-feet near the tail. The chrysalis is protected by a light cocoon, and is coloured black, with orange and yellow rings. There is only one generation of the Magpie Moth each year, but two periods at which the caterpillars feed. namely, late summer and early spring. The pest, besides feeding on the Gooseberry, feeds also on Red Currant, Blackthorn, Black Currant, Plum and Apricot, but I have found it most common on the first three. The best method of control is spraying with nicotine, and this is best done during the first week in September. All leaves hanging on the bushes during winter should be removed and burned, while dead leaves from underneath the bushes should be treated in the same way. Magpie Moth is always most prevalent in neglected gardens; given little chance of places in which to hibernate, the pest does not seem to make much headway.

The third pest, which occasionally does damage to Gooseberry foliage, is the caterpillar of the V. Moth (Halia wavaria, L.). There appears to me to be two broods of this pest each season although I have never seen the spring moths or eggs. In any case, the tiny caterpillars may be found when the foliage is quite small; they feed singly and are "loopers." They are often mistaken in this early stage for young Magpie Moth caterpillars. Later, when they are a little bigger, there is no fear of confusion.

The caterpillars are greyish-green, spotted with black and lined with yellow; the black spots are in little groups of four, and are very tiny. The caterpillars are fully fed in June, and the pupa stage only lasts a very short time—fourteen to twenty-one days. Eggs are laid and the life history repeated, except that the pupa stage now lasts throughout the winter and occurs in the soil in about the same position as that of the sawfly. This pest, in my experience, is only occasionally found on Gooseberries, but is common in certain districts on Red and Black Currants, especially the latter. The best method of control is spraying with nicotine early in the season.

When spraying against any one of the above pests, the operator should remember that so soon as the spray fluid reaches the bushes many of the caterpillars drop to the ground, and unless the ground is well sprayed these 'droppers" will crawl back up to the bushes so soon as the foliage is dry, often before. *Somerset.*

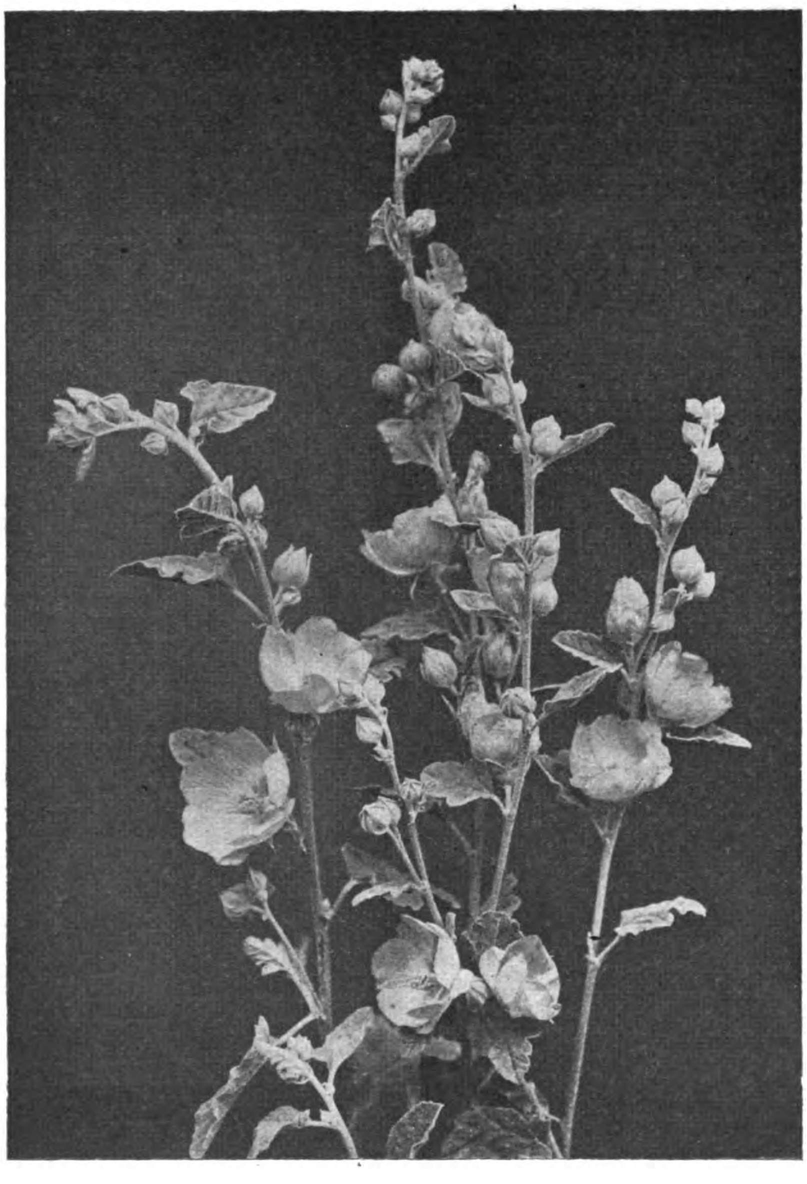

FIG. 77.—SPHAERALCEA FENDLERI VAR. HASCOMBE ORANGE.

R.H.S. Award of Merit, August 10. Flowers bright orange. Shown by Mr. C. T. Musgrave, Hascombe Place, Godalming (see p. 138).

NOTICES OF BOOKS.

* Carnations

Wherever Carnations are grown we imagine the name of Allwood is known; as it certainly is wherever Carnations are shown. In his preface to this, his latest, book on his favourite flower, Mr. Montagu C. Allwood informs us that he entered horticulture as a boy in 1895. His first duties seem to have been that of crocking pots for Carnations, and from our long acquaintance with him, we are certain he crooked the pots as well as pots could be crocked, for Mr. Allwood is as thorough in all he does as he is enthusiastic.

From 1895 to to-day, Carnations have been Mr. Allwood's hobby as well as his life's work, so that anything he writes on the flower is worthy of deep attention. As is well-known, he and his brothers have, at Wivelsfield, taken a large share in the development and enormous increase in popularity of the Carnation. He is not content with what has been done and is "convinced that the development of the

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* *Manual of Injurious Insects*, by E. A. Ormerod, Second Edition.

* *Carnations for Every Garden and Greenhouse*, by Montagu C. Allwood. London; Country Life, Ltd. Price 12/6 net.

Dianthus is only just beginning. for I hope to see, some day, Carnations almost forming bushes in the garden, others only growing two inches high, with great colour variety for the rock gardens ; perhaps even climbing and trailing Carnations, or Malmaisons, with even larger flowers : but, above all, we must retain the delightful perfume and wonderful colourings, or no real progress will have been made." With Mr. Allwood's concluding remark we are in entire agreement ; for the remainder, time and, we hope, Mr. Allwood's skill and enthusiasm, will show.

The author warns his readers that he does not claim any literary skill ; but, as they will discover for themselves, he writes in a fluent and agreeable style. There are no ambiguities, and the Carnation, with its allied plants, are fully dealt with in all their aspects. In *Carnations for Every Garden and Greenhouse* there is something for everyone, from the expert trade-grower to the youngest, who, as Lord Lambourne states in his characteristically written Foreword, is not infallible.

The chapters on the history and early development of the Carnation are very pleasant reading and would entertain the general reader no less than the grower. Mr. Allwood shows that this is no Mushroom plant, for the original Carnation was described so long ago as B.C. 300. From the introduction of Dianthus caryophyllus to its present-day prototype is a long stretch, though the greatest improvements have been effected within living memory. Mr. Allwood tells of the coming of yellow Carnations from Poland over 300 years ago, and up to the early part of the nineteenth century, and states that, a little later, Picotees were imported freely from Holland, Flanders and the Netherlands ; "but now the Dutchman buys his Carnations from England." The suburban gardener, who persists in buying plants from the itinerant vendor, is doing nothing fresh, for Mr. Allwood mentions that, "The vendors of 'Jacks' were evidently in evidence, for poor old Rea says 'Most of these mercenary fellows about London are very deceitful, and whoever trusts them is sure to be deceived, as I myself have often been.' "

The origin of the Perpetual Carnation in France and its spread to this country, chiefly via America, is described, and in connection with this there are excellent illustrations of the various types of Dianthus, showing the evolution of the Carnation. The more recent Perpetual Border Carnations are also described, and for these, as many others agree, Mr. Allwood anticipates a great future. Dianthus Allwoodii, which now has a definite place in many gardens, and the border Pinks, receive their full meed of attention.

But while these chapters are of great interest the chief value of the book lies in the practical side, which, rightly, fills most space. The whole gamut, from selecting and rooting the cuttings, their cultivation through the various stages of growth, to the end, is admirably dealt with, and from his vast store of practical experience Mr. Allwood gives not only the correct method, but, what is often more important, mentions the wrong way of doing things, and, where advisable, illustrates both the right and wrong methods with clear reproductions.

All plants have their diseases and insect pests, and Carnations are no exception to the rule. We are pleased to find that Mr. Allwood insists on clean and sane culture and the necessity of starting with the best available stock. In the opening paragraph of the chapter on Diseases he states : "Nearly all diseases arise from propagating weak and poor cuttings. Disease is increased by propagating cuttings from a tainted stock, rooted or grown in too great a heat, or, what to-day is most common, from plants grown in old soil which is excessively fed with chemical fertilizers and thus weakened. Insufficient air is another cause. The constitution of varieties is undermined and destroyed by these practices, and they become the easy prey of disease, and pass out of cultivation." And similarly, when dealing with insect pests, Mr. Allwood insists that the old maxims "Prevention is better than cure," and "A stitch in time saves nine," apply more strongly to garden pests than anything else.

With Carnations, as with other plants, the enthusiast soon desires to raise new, and he hopes, improved varieties, and for his help there is a very sound chapter, which if read intelligently, will greatly assist towards the desired goal.

The "get up" of *Carnations* is admirable. The type is clear and printed on good paper. There are abundant illustrations from excellent photographs, which tell their story admirably, though in some instances it seems a pity that the "Art Editor" did not give a little more attention to their balance on the pages. But, with this small exception, it is a book to be read and placed on the bookshelf in a handy place for future reference.

* Everyman's Book of Garden Flowers.

One's first impression of this new and revised edition is not at all tempting. The "Jacket," as the paper covering is termed in the trade, bears coloured representations of a Lilium, happily not yet known to horticulture, and Violas of the sort sometimes associated with picture books for very young children. Without the jacket the book is pleasant to look upon. It is well printed and copiously illustrated with reproductions of quite good photographs. The "Prefatory Note" states that "The reader will find herein described the varieties of Border and Bedding Flowers usually grown in British gardens. From considerations of space, Roses, shrubs, climbers and rock plants have been omitted from this collection." This quotation will give an idea of the intentions of the author but, nevertheless, the reader will find occasional descriptions, and an illustration, of alpines. The subjects are arranged in alphabetical order, and considerable care seems to have been taken with them, though we notice that in the first plant mentioned, Acanthus mollis, Mr. Halsham repeats the statement of some older writers that the plant needs full sun and a strong, deep soil, whereas, we have grown it, with great success, in a poor soil in a sunless position and often recommend the plant for such situations.

Mr. Halsham seems to have been unusually unfortunate with Mignonette, which "is decidedly capricious in its coming up," though his cultural methods appear to be correct. In many years of gardening we cannot recall any even partial failure, nor were we aware that "sometimes the most careful and experienced grower will fail to get a crop."

PUBLIC PARKS AND GARDENS.

Fulham Borough Council has applied for a portion of the Palace grounds for use as a public recreation ground.

The Urban District Council of Portadown is to apply to the Finance Ministry of Northern Ireland for sanction to borrow money for laying out a pleasure garden in Bridge Street.

Cheltenham Town Council has decided to lay out a new park, at an estimated cost of £10,250.

The Wembley and Harrow Councils are negotiating for the provision of a new public park on an area of land between Harrow Road and Watford Road, Wembley, on the London side of Harrow Hill.

Hornsea Urban District Council has received the sanction of the Ministry of Health to borrow sums amounting to £1,771 for public walks and pleasure grounds and the improvement of Cliff Road.

REMARKS ON THE CONDITION OF THE FRUIT CROPS.

(See Tables and Summaries, Ante, pp. 111-117.

(*Continued from p.* 133.)

SCOTLAND, W.

Ayrshire.—Fruit trees and bushes gave every prospect of a good crop until the middle of May when we had 5° and 7° of frost and which caused great disappointment, especially in regard to the Apple and Pear crops. Strawberries, Raspberries and Black Currants suffered a good deal at that time also. The soil is of a light nature resting on a gravel subsoil. *D. Buchanan, Bargany Gardens, Dailly.*

Buteshire.—Frosts and cold winds during May had a curious effect on the fruit crops : some of the Apple trees are bare of fruits, while others are carrying good crops. The same remarks apply to Raspberries ; some varieties are a failure with the flowers all withered up, others are quite good. These results are due to the condition of the flowers during the few days of very bad weather in May and early June. On the whole the fruit crops are a fairly good average, only rather late. Our soil is heavy clay loam on marl rock. *John J. Davidson, Ardencraig, Rothesay.*

Dumfriesshire.—Our soil is sandy loam. Small fruits are very disappointing this year, Raspberries and Gooseberries being the only kinds which have a full crop. Black Currants looked very promising, but two frosty nights caused considerable damage and the fruits dropped. Apples blossomed well and we were looking forward to a bumper crop, but alas ! the crop is much under the average, and some trees are altogether barren. This is the worst year for outside fruits I have experienced since I came here, over thirty years ago. *James McDonald, Dryfeholm Gardens, Lockerbie.*

ENGLAND, N.E.

Durham. –All fruit trees gave promise of heavy crops, as they were smothered with blossom, particularly Apples, but the cold winds and several sharp frosts in May dashed all our hopes to the ground. Plums are the heaviest crop we have had for several years. Bush fruits and Strawberries were exceptionally good. Only one variety of Apple is carrying a reasonable crop, and this is Lord Grosvenor ; all others are a complete failure. Caterpillars are very numerous this year. Our gardens and orchards are surrounded on all sides by trees, which have every leaf infested by caterpillars, especially the Lime trees. *J. A. Woods, Beamish Park Gardens, Beamish, S.O.*

Northumberland.—All fruit trees promised good crops in early spring ; Apricots set well, owing to a fortnight's fine weather. During the flowering period of Apples, Pears and Plums we experienced sharp frost and heavy rains, so that the fruit blossom had no chance of setting. Fruits on young Strawberry beds were spoiled by frost, but older beds, being later to flower, escaped. This is the worst year I have experienced for caterpillars ; our trees have been bared of foliage. I had to spray twice before the bloom was open as the trees were covered with green-fly. Last winter was the most severe known here for many years, so that is proof that frost does not kill insects. The soil here is light loam with no great depth, resting on a bed of freestone. *Wm. McCombie, Newton Hall Gardens, Stocksfield-on-Tyne.*

——Owing to the cold, sunless spring and keen frost, the fruit crops are a dismal failure, with the exception of Strawberries, Currants and Gooseberries. The soil here is a sandy loam. *J. Winder, Howden Dene Gardens, Corbridge-on-Tyne.*

Yorkshire.—The Apple crop in this district is very poor ; the trees flowered well but the heavy rains and cold, frosty nights proved fatal to what promised to be a good crop.

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* *Everyman's Book of Garden Flowers*, by John Halsham; London. Messrs. Hodder and Stoughton. Price 6/- net.

Pears are poor in this district. Plums are an average yield for this locality. Red Currants and Gooseberries are a good crop, but Black Currants are poor. Raspberries are good in sheltered positions, but where exposed are a failure. Loganberries are very good. The soil is a heavy clay and shale. *Charles Wakefield, Birchlands Gardens, Sheffield.*

——With the exception of Apples and Strawberries, the crops are heavy and the quality good. Pears, Gooseberries, Red and Black Currants are particularly abundant. Green and black-fly have been very troublesome. The soil is of a light texture, of medium depth, on gravel. *C. A. Ilott, Grantley Hall Gardens, Ripon.*

——Lane's Prince Albert, James Grieve, Newton Wonder, Bramley's Seedling, Lord Grosvenor and Cox's Orange Pippin are our best cropped Apples. Strawberries and small fruits have good crops. We are ninety feet above sea-level. The June rainfall was 3·09 inches. The soil is inclined to sand here and rests on chalk. *John Turton, Sowerby Hall Gardens, Bridlington.*

——Seldom have fruit plantations presented a more charming picture than this spring. The floral beauty of the Apples, Plums, Pears, etc., was exquisite, and in many cases the ground was covered with their petals. Apples, Pears and Plums are average crops on wall trees, but bush and standard trees are very lightly cropped. Damsons are good and it is some years since we had such a fine crop; the trees are all healthy and clean this year. Strawberries were good and of fine quality. Black and Red Currants and Gooseberries are good, but Raspberries are only fair, and our soil being stiff, retentive clay, Walnuts are good. *E. Knowles, The Hagg Gardens, Mirfield.*

——My garden soil is strong loam on a clay subsoil of great depth. At Easter the blossom on Pears and Apples was a wonderful sight and, had the weather continued even tolerably good during the next few weeks, when the fruit was setting, splendid crops most assuredly would have followed. The genial south-westerly winds which we had been experiencing ceased suddenly about the middle of April, and during the next twenty-nine days the wind blew steadily from the north, north-east and east, with cold conditions during the day and frosts each night, almost without exception—the results were disastrous. The following notes, which I made at the time, will show what happened. I have about thirty varieties of Apples, Pears, Plums and Cherries, mostly as cordons, and have only space here for a few of these notes, but they are typical and will suffice. Cordon Pears:—Doyenné du Comice, full bloom April 12, 57 trusses of bloom, 1 fruit set; Conference, full bloom April 5, 53 trusses of bloom, 2 fruits set; Durondeau, full bloom April 1, 93 trusses of bloom, no fruit set. Cordon Apples:—Cox's Orange Pippin, full bloom April 23, 45 trusses of bloom, no fruits set; Orleans Reinette, full bloom April 23, 23 trusses of bloom, no fruit set; James Grieve, full bloom April 30, 25 trusses of bloom, no fruit set. Large bush Apples:—Irish Peach, full bloom at Easter, 1,700* trusses of bloom, 15 fruits set; James Grieve, full bloom April 28, 800* trusses of bloom, 12 fruits set. A few cordon Pear trees are carrying average crops and the fruits are of good appearance. These are Laxton's Superb and Colmar d'ete. *W. H. Bolton, 8, Ash Grove, Beverley Road, Hull.*

——For the second year in succession, there appeared, at the time of flowering, every prospect of record fruit crops; these however, as in the previous year, failed to materialise, the cause being the very inclement weather when the blossoms were expanding. Slight frosts were frequent, also hailstorms, one in particular being very severe on May 13. Gooseberries are a heavy crop; Black Currants and Raspberries are an average yield; but Strawberries lost many of the earlier blossoms through frosts. The soil here is a good loam resting on clay with a base of chalk. *J. S. Coates, Dalton Hall Gardens, Beverley.*

——The cold winds and frosts, with drought at the same time, spoiled the Plum and Apple crops. Small fruits, with the exception of Black Currants, are very heavy crops. *James E. Hathaway, Baldersby Park Gardens, Thirsk.*

——In this part of Yorkshire, we had plenty of blossom on all fruit trees, but a poor set of fruit. Black Currants and Red Currants were ruined by aphis, but Gooseberries are an excellent crop, and Strawberries well up to the average. The crops generally are very poor, but this is a poor fruit district, being seven hundred feet above sea-level, and on a clay subsoil. *A. Dryden, Field House Gardens, Triangle, Halifax.*

——Late frosts and generally cold days prevailed in spring consequently an absence of bees and other pollenating agents was apparent. There was a good show of bloom, but poor results. *J. G. Wilson, Wakefield.*

ENGLAND, N.E.

Lancashire.—An abundant display of bloom in early May was followed, at the end of the month and right into early June, by a succession of night frosts, which almost completely wrecked the fruit crops and, in addition, the injured foliage was affected by an unusual visitation of aphis which completed the disaster. *W. B. Upjohn, The Hall Gardens, Worsley, Manchester.*

ENGLAND, E.

Cambridgeshire.—A splendid show of blossom was followed by disappointing crops owing to wet weather and cold winds. Gooseberries were plentiful, but Black Currants a failure. All fruits, both hard and soft, were very seriously affected in this district by severe hailstorms. Strawberries suffered greatly in some cases, only about a third of the crop being left fit for use. Owing to injury caused by the hail, Plums and the few Apples we have dropped from the trees; so taken all round, the fruit crops are a partial failure. *Arthur Sewell, 42, Barton Road, Ely.*

(*To be continued.*)

VEGETABLE GARDEN.

CABBAGE MEIN'S No. 1.

On March 1, I took charge of a large garden which had been sadly neglected. There were absolutely no vegetables to supply the needs of the establishment, and it is doubtful whether I would have taken the post if I had known the true state of things at the outset. In the circumstances I had to do my best and violating all rules, I sowed seeds of Mein's No. 1 Cabbage under glass. In due course the seedlings were planted out, and to my surprise I was able to cut large, hard and compact heads at the end of May. Further trials have convinced me that Mein's No. 1 Cabbage is particularly adaptable to the soil north of Essex. *J. A. G., Loughton.*

FRUIT GARDEN.

STRAWBERRIES.

Runners layered early in July have filled their pots with roots and made strong plants ready for making new plantations. The ground prepared for planting should be thoroughly trodden, and care should be taken that each plant is set firmly and not too deeply in the soil. The crown should stand free just above the level of the bed when planting is completed. Ample space should be allowed between the rows; for strong growing varieties on rich soils, a distance of at least thirty inches is necessary.

When planting is finished, water the plants thoroughly if the weather is dry, and so soon as the surface is sufficiently drained, hoe the soil and keep it stirred. Where plants are being imported from other districts they should be obtained as early as possible, and only those varieties should be grown which are known to do well in the particular district of the garden. New or untried varieties should only be grown in small quantities until their value has been proved.

HOME CORRESPONDENCE.

The Dahlia.—The R.H.S., scarce half-a dozen years ago, declined, as everyone knows, to recognise those Dahlias hiding, or half-hiding their flowers in the plant, or timorously hanging their heads on tottering stems. Year after year since, munificent and magnificent displays in the London parks have demonstrated, amply and decisively, the remarkable advance in the Dahlia—in its freeness of flowering, the length and stiffness of its stem, the brightness, variety and beauty of its colour. Last season, too, some correspondence passed through your columns urging greater attention to the Dahlia of to-day from those responsible for its distribution and demonstration. Yet, after all this, or in spite of all this, it is amazing to find those who, either unsympathetic with, or unappreciative of, this unmistakable advance, continue to propagate and plant varieties in which neither flower, nor manner of flowering, nor habit, has a single merit. I have just seen in a certain public park in the North an expanse of Dahlias ideally positioned. Most of the plants, however, as well as being out-of-date in respect of variety and colour, have, in a greater or less degree, all those defects which militated against the Dahlia almost to its ultimate exclusion as a garden plant. But in looking through the schedules of flower shows one gathers cause for greater hope for the future. For example: the management of the great Southport Show, I see, has boldly and commendably taken its courage in both hands. This year it has made it unerringly clear in the schedule "No artificial support allowed." Well done, Southport! And so it must be if the Dahlia is to keep its worthy and ideal place as a garden plant; so it will be if the great garden-loving public is not befooled into buying plants the blooms of which they see but once a year for an hour or two at a flower show. Who will follow Southport's lead? *Veritas.*

Silver-leaf Disease.—The number of trees, especially of Plums, but frequently of Cherries, and occasionally an Apple, which one may see in private gardens unmistakably suffering from the scourge of silver-leaf disease is becoming a serious matter. The trouble is not only that the majority of private garden owners are apparently ignorant of the existence of the disease or of the seriousness of its character, but they look upon it as interfering impertinence should one venture to draw attention to a suffering tree and inform them of the fact that it is notifiable to the Ministry of Agriculture, or that the tree should be destroyed. The writer recently explained these facts to a medical man whose garden contained a big tree in an advanced stage of the disease and is surrounded by other gardens well-stocked with mature fruit trees. The doctor said he would "speak to his man" about it, and a few days later remarked that the jobbing gardener had said "he knew all about it and was only waiting for the proper time when he would easily cure the tree." Qualified gardeners who observe silver-leaf in gardens near by them hesitate to interfere because of the resentment with which the information is received, but the truth is the horrible disease is so grave a menace to the continuation of fruit culture throughout England that inactivity cannot be excused. We must, in self defence, either inform the ignorant owners of diseased trees of the evil consequences of indifferent neglect, or must act upon the distasteful alternative of informing the Ministry of Agriculture. To do neither, when fully aware of the danger is more reprehensible than for the ignorant to take umbrage at perfectly reasonable interference. *A. J. M.*

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* Estimated.

SOCIETIES.

ROYAL LANCASHIRE SHOW.

The Royal Lancashire Show was held at Burnley on July 29, 30, 31 and August 2. This show has attained such a high standard of merit that it has become difficult to maintain that standard, let alone excel it. The horticultural exhibits were staged in one very large tent, and the arrangements and weather were all that could be desired. Excellent entries combined with liberal prizes made the whole section a great success, and judging, from the large number of people waiting for admission, the horticultural section seemed more attractive than ever.

The chief features of the show were three groups of miscellaneous plants, collections of Sweet Peas, collections of perpetual-flowering Carnations, Roses and hardy perennials, which were again excellent. Vegetables are always a strong feature at this show, and competition was again keen in the three trade classes provided.

For a group of miscellaneous plants, Messrs. J. Cypher and Sons, Cheltenham, were placed first for one of their beautiful groups, which seem to improve as the season advances; second, Mr. W. A. Holmes, Chesterfield, also with plants well-grown and well-arranged; third, Mr. T. M. Petch, Bradford. For a collection of Sweet Peas, Messrs. Herd Bros., Penrith, won the first prize of £15 with a fine exhibit; second, Messrs. Scott and Sons, Cheshire. The first prize winners in the other four Sweet Pea classes were Mr. J. Pilkington, Mr. Norman Bell and Dr. J. A. C. Roy. The best collection of Carnations was staged by Capt. Starkey, Padiham. The £20 prize for a collection of Roses was won by Mr. Thomas Robinson, Nottingham, with a splendid exhibit of well-grown blooms, well-staged; second, Messrs. Wheatcroft Bros, Gelding.

Collections of hardy perennials, thirty feet by ten feet, were again a strong feature. These exhibits increase in popular favour each year and are now arranged in a much more attractive manner than formerly. Messrs. Bees, Ltd., Liverpool, won the first prize of £30; second, Messrs. W. Artindale and Son, Sheffield; third, Mr. Maurice Prichard.

The first prizes offered by Messrs. Sutton and Sons, Messrs. Clibrans and Messrs. Dickson and Robinson, respectively for collections of vegetables were all well won by Mr. W. Robinson, Garstang, with excellent produce.

Trade exhibits were a special feature.

Large Gold Medals were awarded to Messrs. Sutton and Sons for Gladioli and hardy annuals; to Messrs. Allwood Bros. for Carnations and Dianthus Allwoodii, with flowers of extra fine quality; to Messrs. Blackmore and Langdon for Begonias and Gladioli; and to Messrs. Alex. Dickson amd Sons, Newtownards and Belfast, for a fine exhibit of Roses.

Gold Medals were awarded to Messrs. Foxlies and Sons for hardy flowers; to Messrs. Toogood and Son for Gladioli and herbaceous flowers; and to Messrs. G. Gibson and Co. for hardy flowers.

Silver-Gilt Medals to Mr. P. Gardener for a rock garden; to Messrs. Isaac House and Son for Scabious; to Messrs. Hewitts, Ltd., for Phloxes and other hardy flowers; and to Mr. J. F. Barwise for Roses.

Silver Medals to Mr. Rogers, Pickering, for a rock garden; to Mr. J. Jones, Wem, for Violas and Gladioli; and to Messrs. Maxwell and Beale for alpine plants.

BAKEWELL HORTICULTURAL.

The third annual exhibition of this Society was favoured with glorious weather and an attendance of 20,000 people; this attendance is remarkable for a one-day show, and reflects very creditably on the energy of the director, Mr. W. Rowland Burke, and his very able assistants. The entries were more than double those of the past year.

The exhibits in the amateurs' classes were such as would do credit to any exhibition and the competition was very keen. Sweet Peas were splendid. The amateurs' exhibits were extremely effective in general arrangement, each competitor having a uniform space of ten feet. Out of the 486 competitors, 190 were prize-winners.

The larger marquee was occupied by trade exhibits, and it would be impossible, with limited space, to do anything like full justice to all the displays. Remarkable interest was taken in the collection of Nymphaeas and water plants exhibited by Mr. Amos Perry, Enfield, which included small Nymphaea pygmaea helvola, the largest Marliacae varieties, Mrs. Richmond, Escarboucle, N. Moorei and Attraction, as well as the beautiful stellata. These, with various herbaceous plants each end, were backed by Thalia dealbata, Papyrus antiquorum and other suitable grasses (Gold Medal). Messrs. Sutton and Sons had a beautiful and artistic display of hardy annuals and Gladioli arranged in baskets and vases (Gold Medal). Messrs. J. Carter and Co. contributed Gladiolus primulinus and G. gandavensis in variety, all tastefully arranged with Ferns and Asparagus (Gold Medal). Mr. J. C. Allgrove, Slough, had numerous dishes of fruit and bushes of Gooseberries and Red and Black Currants in pots. He also had some fine examples of Cherries and Apples (Gold Medal).

Messrs. C. Engelmann Ltd. showed Carnations of exceptional colour and quality. Messrs. L. R. Russell, Ltd. Richmond, had a pretty semi-circular water garden backed with Bamboos and grasses (Gold Medal). Messrs. Dicksons, Chester, contributed a bold group of Phloxes, Lythrums, Campanulas and Pentstemons (Gold Medal). Messrs. Barron and Sons, Barrowash, Messrs. R. W. Proctor and Sons, Chesterfield, and Mr. Thomas Robinson, Nottingham, exhibited Roses, and each firm was awarded a Gold Medal. Messrs. J. Kelway and Son made a brilliant display of Gladioli (Gold Medal). The Chalk Hill Nurseries, Reading, had a very comprehensive and well-arranged group of herbaceous and bulbous plants (Gold Medal). Messrs. Ed. Webb and Sons were the recipients of a Gold Medal for Liliums, Gladioli and annuals.

Messrs. J. Cypher and Sons were deservedly awarded a special Gold Medal for one of their fine collections of stove and greenhouse plants. Messrs. Blackmore and Langdon contributed Delphiniums, Begonias and herbaceous Phloxes (Gold Medal). Messrs. Dickson, Brown and Tait, Manchester, also Messrs. Dickson and Robinson, Manchester, were also awarded Gold Medals. Messrs. Isaac House and Son showed Scabiosa caucasica varieties (Gold Medal). Messrs. Brooke, Bray and Sons, Ltd., Sheffield, contributed some very artistic floral designs. Messrs. Clark and Sons, Dover, showed clipped trees in various shapes.

ELGIN HORTICULTURAL.

Thanks to the kind invitation of Mrs. W. McConnell, Pitchroy; Mr. George F. McCorquodale, of Dalchroy, and Sir George Macpherson Grant, Bart., of Ballindalloch, the members of this Society recently spent an enjoyable day visiting the gardens on these beautiful Speyside estates.

Driving by the Glen of Rothes, Pitchroy was the first stopping place. Here the members were met by Mr. Duncan, head gardener, who ably played the part of guide, philosopher and friend. An outstanding feature here was the finely-grown beds of Roses, Stocks, Pentstemons and Nemesia, all in perfect bloom, while the conservatory contained fine masses of Pelargoniums, Hydrangeas and Begonias. The rockery was also admired and surprise expressed at the general earliness of the plants in bloom.

Dalchroy was the next garden visited, and here Mr. P. Gow, gardener, was in waiting, and proved an admirable guide. The noted mansion of Dalchroy is situated on a wooded hillside and commands an excellent view. The wild nature of the locality is maintained, the entrance drive being bordered with Broom and Heather, amongst which have been planted Heaths of all varieties. A fine rock garden has just been completed on the hillside close to the mansion. There is also a dell in the grounds, artistically laid out with walks and rustic bridges—a lovely spot in spring, when it is resplendent with Daffodils and Polyanthus. Here was seen a granite slab on which was carved the inscription: "King Edward VII, while staying at Tulchan Lodge in September, 1907, came to Dalchroy, and was the first to walk down this path." The party was entertained to an excellent lunch, served in the spacious dining-room of the house, and Mrs. McCorquodale gave her personal attention to the comfort and enjoyment of the visitors, for which she was warmly thanked.

Ballindalloch Castle was the next place visited and here Sir George Macpherson Grant welcomed the party, and requested Mr. Edwards, his gardener, to see that the visit was made a pleasant one. Ballindalloch Castle dates from 1546, and over the entrance door is carved the family motto: "Touch not the cat bot a glove," and, "The Lord shall preserve thy going out and coming in." Here, as at the other places visited, the herbaceous borders were very fine; Delphiniums, were especially good, several of them being eleven feet high, while plants of Lilium giganteum were admired for their vigour and number of blooms. The blaze of colour along the long stretch of border formed a feast to the eye. The Rose garden proved a great attraction, the collection being large and up-to-date, while the Carnation house, with its superb collection of upwards of 150 varieties, proved very interesting.

Each of the gardeners in turn were warmly thanked by the party for the fine contributions they had made to the day's enjoyment, and Mr. Arthur Wood, the Secretary of the Society, won golden opinions for his admirable arrangements. The weather was perfect and the outing was voted one of the most successful and interesting ever held under the auspices of the Society.

ABERDEEN HORTICULTURAL.

August 12, 13 and 14.—Granted once again the privilege of holding their annual exhibition in Aberdeen's most beautiful public park, Hazelhead, the members of the Royal Horticultural Society of Aberdeen took full advantage of the surroundings, and staged one of the finest shows held under the Society's auspices. It was, indeed, a gorgeous display, and showed once again what gardeners in the north-east of Scotland can accomplish. The opening ceremony was performed by the Countess of Southesk. Mr. J. B. Rennett, the secretary and treasurer, carried out all the arrangements admirably, the only discomfort being the somewhat changeable weather.

Pot Plants.

This section provided some remarkably well-grown plants, chief interest being centred in the circular group of pot plants arranged for effect on the ground (not exceeding ten feet in diameter). Here Viscountess Cowdray, Dunecht, Aberdeenshire (gr. Mr. W. Smith), had a capital display, her lovely specimens of Dracaenas and Codiaeums compelling admiration. The second, third and fourth prizes went to Enfield, Rubislaw and Morkeu, respectively. Lady Cowdray also won handsomely for Ferns and plants for dinner table decoration. Colonel Gill, of Dalhebity (gr. Mr. A. Brebner), excelled for best specimen pot plants and also for Ferns. Mr. Brenzie, Morkeu (gr. Mr. W. Henderson), earned premier honours for Zonal Pelargoniums and Fuchsias. An outstanding feature here was the finely grown Begonias entered by Sir Thomas Jaffrey, Edgehill (gr. Mr. J. Cook). These were greatly admired, as also were the Gloxinias and double Begonias sent from Enfield (gr. Mr. R.

Murray). All those named worthily earned the leading places.

CUT FLOWERS.

There was a glorious feast of colour in this section. Colonel GILL won many successes for Roses, taking first places for eighteen Rose blooms, H.P. and H.T., or either. For this entry he was also awarded a Silver Cup. He also led for the best six bunches of decorative Roses and for six vases of distinct varieties. The Cactus Dahlias and Zonal Pelargoniums sent from Dalhebity also gained leading honours. Mr. R. MURRAY, Enfield, led in the class for hardy herbaceous flowers, his twelve bunches named, distinct, worthily earning first place. He also won first prize for ladies' sprays. For the best twenty distinct varieties, cut flowers, and fine foliage bedding plants, including annuals, Sir THOMAS JAFFREY, Edgehill, had a fine win. He also led with grand varieties of double and single Begonias. Gladioli were a feature, that well-known grower, Mr. D. WHITELAW, Station House, Laurencekirk, winning first prize.

For Carnations, LADY COWDRAY was again to the front with a remarkably fine display, considering the season. Sweet Peas proved the outstanding feature, and here the veteran grower and prize winner, Mr. J. A. GRIGOR, Duff House, Banff, had matters very much his own way, and carried off the principal honours with exquisite blooms which earned the warm encomiums of the visitors. He also had some remarkably well-grown Collerette Dahlias. Asters proved a great attraction, and here Mr. P. F. MCQUEEN, Logie House, Pitcaple, Aberdeenshire, led with magnificent specimens.

FRUIT.

The display in this section was not extensive, but the quality was good. The chief feature was the Black Currant class, the berries being very large. Here, again, VISCOUNTESS COWDRAY had some notable successes. She won first prize for the best collection of hardy fruits, for Raspberries, for Grapes (white and black), for Peaches, for Melons, for Nectarines, for dessert Apples, for Plums and for Pears. The Black Currants from Linton House, Aberdeenshire (gr. Mr. A. Gardiner), were superb specimens. Mr. N. M. DUNCAN, Johnston House, Rubislaw, Aberdeen, and Sir THOMAS JAFFREY, Edgehill, were the prize winners for Gooseberries, yellow, green and red varieties. Colonel GILL had the best Tomatos. Had the season been more propitious, a much better display would have been seen.

VEGETABLES.

This section is always a feature at Aberdeen, and this year was no exception to the rule. The blue ribbon for the best collection of vegetables, comprising eleven varieties, viz., Peas, Cabbage, Cauliflower, Potatos, Turnip, Carrot, Onion, Parsley, Beetroot, Celery and Tomato, was worthily won by Mr. P. F. MCQUEEN, closely followed by Sir THOMAS JAFFREY. The last-named took leading honours for salads and Potatos (kidney shaped). Some very fine entries came from Honeywood House, Aberdeenshire (gr. Mr. George Meldrum), which won first honours for Carrots, Cucumbers, Celery, Broad Beans, Vegetable Marrows and Parsnips. Colonel GILL had some fine Potato entries which secured him leading awards. From Moy House, Forres, Morayshire (gr. Mr. Charles Stuart), came the best Onions and Beetroot (long), while Mr. FRED MOIR, West Town, Queens Road, Aberdeen, led for Cabbages and Beetroot (globe). Mr. WILLIAM LAWSON, Cornhill, Aberdeen, gained the challenge Gold Medal offered for the best collection of vegetables, open to market gardeners.

NURSERYMEN AND FLORISTS.

Some exceedingly fine exhibits were shown in this section, and its traditions were worthily upheld. Messrs. ADAM AND CRAIGMILE, Fernielea Nursery Aberdeen, secured the leading place for Roses, their thirty-six blooms, distinct, gaining also the Society's Silver Challenge Cup. The local florists, Messrs. GEO. PEGLER AND CO., Messrs. MCDONALD, Holburn Street, and Mr. MUNRO, Union Street, divided the other leading prizes.

AMATEURS' DIVISION.

There was no cause to be ashamed of the quality seen here, and hearty congratulations must be extended to those who have devoted so much of their spare time to their gardens, and the fine results they achieved. It proved a most meritorious display.

TRADE EXHIBITS.

As usual, the local florists provided a display not only pleasing to the eye but educative. Space forbids a detailed description, which could easily fill the whole issue of *The Gardeners' Chronicle*, but the names of the firms who so kindly and at great expense contributed not a little to the success of the show were: Messrs. ADAM AND CRAIGMILE, Messrs. BEN REID AND CO., Messrs. ALLWOOD BROS., Messrs. PEGLER AND CO., Messrs. KNOWLES AND SONS, Messrs. W. SMITH AND SONS, and Mr. W. MCDONALD, all of Aberdeen.

SHROPSHIRE HORTICULTURAL.

AUGUST 18 and 19.—Shrewsbury Floral Fete continues to be a great annual festival for the whole of the counties in Wales and those English counties which border on the Principality. On this occasion a splendid horticultural display was provided, and the greater part of it was housed in a big four-span tent of the kind now familiar to those who visit the Chelsea and Southport Shows, while other large tents were devoted to Fruits (a fine section), Vegetables, Table Decorations and Cottagers' exhibits. The exhibition was a very fine one and the general arrangements good. Judging commenced punctually at 8.45 a.m., and visitors were admitted at 10.30 a.m. Notwithstanding heavy rain while judging proceeded, the attendance appeared to be as large as usual at opening time, while soon after twelve o'clock two large queues were formed by people waiting to pass into the big tent, and at that period the tents were so packed that inspection of the exhibits was difficult and note-taking next to impossible.

Ample prizes encourage exhibitors to Shrewsbury, while a large number of entertainments on the right-hand side of the Quarry Park are as great an attraction as is the horticultural section. In addition there is plenty of good music and the bright floral display in the picturesque Dell.

We were glad to notice on this occasion that the flower show officials devoted some attention to the entertainment of the judges, who were invited to a reception during the eve of the show.

GROUPS AND PLANTS.

The open classes for groups of plants are always a centre of interest and on this occasion there were four exhibits in the class for a display of miscellaneous plants arranged for effect on a space of 300 square feet. The chief prize of £45 was awarded to Sir G. H. KENRICK (gr. Mr. J. Macdonald), Whetstone, Birmingham, for an exhibit in which finely coloured Codiaeums played a prominent part; these were associated with Liliums in variety, Humeas, Francoa ramosa, Cypripediums, Cattleyas and the usual accompaniment of Ferns, Rex Begonias, and Selaginellas; we thought the draping of the arches in the background was a trifle heavy. Second prize was awarded to Mr. W. A. HOLMES, Chesterfield, who had well-grown and finely coloured Codiaeums tastefully arranged with Palms, Ferns, Lilies, Odontoglossums, Odontiodas, and Cattleyas; this was a bright and well balanced arrangement, and in the opinion of many experts it deserved a higher award. Messrs. J. CYPHER AND SONS also showed well and elegantly, but their display was a little lacking in colour; they were awarded third prize, while the fourth award went to Mr. W. R. MANNING, Dudley.

The first prize of £35 offered in the class for a group of ornamental foliage plants, arranged on a space of 250 square feet—flowers and flowering plants excluded—was awarded to Mr. W. A. HOLMES, whose arrangement of Codiaeums, Nandina domestica, Palms, foliage Begonias and Ferns was very pleasing; second, Messrs. J. CYPHER AND SONS; third, Mr. W. A. MANNING; fourth, Sir G. KENRICK.

All these groups would be much more effective if a space of at least one yard in width were allowed between the exhibits.

In the local class for a group of plants, A. M BARBER, Esq. (gr. Mr. T. A. Brimmell), Wellington, led with a very fair display; second, Mr. W. HOWELLS.

The specimens shown in the class for fifteen stove and greenhouse plants were poor as compared with those seen a score of years ago; Mr. W. R. MANNING was awarded first prize; Messrs. J. CYPHER AND SONS, second, and Mr. H. CLIFFT, third.

Tuberous Begonias were best shown by Messrs. BLACKMORE AND LANGDON, who were easily first prize winners in the open class for a group of these plants; the Bath firm showed in splendid style; second, Mr. A. M. BARBER. In the Amateurs' Class, Mr. H. FIELDING, Marlbrook, was the most successful competitor.

ROSES AND SWEET PEAS.

Roses made an effective feature, especially those in the class for a collection of blooms arranged for effect on a space of twenty feet by four feet. Here the first prize was a piece of Coalport China, valued at £15 15s., and £15 in cash, and these awards were won by Messrs. OLTON AND SON, with a bold exhibit in which the arch of George Dickson, and the central basket of Lady Inchiquin and the pillars of Golden Emblem and Los Angeles were the outstanding features; second, Mr. T. ROBINSON; third, Mr. C. GREGORY; fourth, Messrs. BEES, Ltd.

Mr. C. GREGORY showed the best eighteen vases of Rose blooms, and the set included good examples of Lord Charlemont and Hortulanus Budde. Mr. J. E. RAYNER had the best twelve Roses, while Mr. C. GREGORY led in the class for three baskets of Roses, showing Mrs. H. Morse, Mabel Morse and Lady Inchiquin; second, Messrs. HORTON BROTHERS.

In the principal class for Sweet Peas, the competitors had to make a display on a space fifteen feet by four feet. There were several exhibitors, and the first prize in cash and a piece of Coalport China was awarded to Messrs. W. SCOTT AND SON, Styal, who had a capital set, considering the season, in which W. J. Unwin, Charming, Ivory Picture, Picture and Elegance were in fine condition; second, Mr. J. A. GRIGOR, Banff; third, Mr. A. LEIGH.

Mr. G. H. BROOKSHAW secured the first prize for a dozen bunches of Sweet Peas and his set included good bunches of Peggy, Constance Hinton, Charming, Hebe, W. J. Unwin, George Shawyer, Warrior, Crimson King, Mrs. Arnold Hitchcock, Gold Crest, Picture and Sunset; second, Mr. J. G. BATE, Cheltenham; third, Miss E. M. WEAVER, Mold.

For six vases of Sweet Peas the awards were made to Mr. BROOKSHAW, Mr. J. H. BATE and Mr. J. W. DOWNES, Calverhall, in the order mentioned.

HARDY FLOWERS.

Once more the exhibits in the class for a collection of hardy flowers, arranged on a space of 250 square feet, provided a most effective and educational feature. The President's prize and £20 in cash was awarded to Messrs. BEES for a splendid exhibit, in which giant sheaves of Hollyhocks, Gladioli in great variety, Kniphofias, Liliums, Pyrethrums and other fine subjects were set up in superb fashion; second, Mr. M. PRICHARD AND SON; third, Messrs. GUNN AND SON.

For eighteen bunches of hardy flowers, Messrs. BEES were once again premier prize winners.

The best collection of Gladioli was the one arranged by Messrs. G. MAIR AND SON, Prestwick, whose spikes were wonders of clever cultivation and skilful raising as most of the sorts exhibited were their own; in several instances there were thirteen or fourteen fully expanded, large blooms on a spike.

Very beautiful were the exhibits in the class for a collection of Lilies and other bulbous flowers, arranged on a space of 100 square feet; in this class the first prize was well won by Messrs. Bees with a handsome display of big sheaves of Lilium speciosum, L. auratum, L. tigrinum, Gladioli and Crinum Powellii; second, Messrs. M. Prichard and Son, Christchurch.

CARNATIONS AND DAHLIAS.

Mr. C. Engelmann contributed a grand display of Carnations in the class for a display on a space eighteen feet by five feet, and he set up splendid bunches of Laddie, Red Laddie, Marion Wilson, Maine Sunshine, and White Wonder. In a smaller class Messrs. Stuart Low and Co. led, showing Topsy, White Pearl, Sybil and Shiela in fine condition.

Mr. H. Woolman secured the premier position for a collection of Dahlias staged on a ground space of eighteen feet by five feet; he had a fine exhibit in which large decorative and Paeony-flowered varieties were used with great effect; second, Mr. H. Clarke. Mr. Woolman also had the best collection of Cactus Dahlias and showed this section in capital style.

FLORAL DECORATIONS.

This section was a capital one and the competition in most of the classes was very keen.

Mr. A. Adshead, Gatley, led for one bride's and two bridesmaids' bouquets, using white forms of Cattleya gigas with Francoa ramosa in the former, and cerise Carnations in the latter; second, Mr. Chas. Vickers, Leicester; third, Mrs. J. Nixon, Alderley Edge. The best bridal bouquet, in a separate class, was shown by Mr. A. Adshead who used Cattleya hybrids to advantage; second, Mr. C. Vickers; third, Mrs. J. Nixon.

For a basket of cut flowers Mr. Adshead was again first prize winner with a bold arrangement of Cattleyas, Francoa ramosa, Anthuriums and Gloriosa blooms; second, Mrs. J. Nixon; third, Mr. C. Vickers.

Out of a dozen entries in the class for a basket of flowers (Orchids and greenhouse flowers excluded), the chief award again went to Mr. A. Adshead, who had a fine design in Gladiolus primulinus hybrids, golden-bronze Chrysanthemums and Lilium Henryi; second, Miss Newsham, Aughton: third, Messrs. Isaac House and Son, with Scabious.

Bowls of cut flowers were numerous and the awards were made in the order given, to Mrs. Madeley, Wem (Carnations); Mrs. J. Nixon, (Gerberas); and Miss Newsham, (Roses). Some very poor arrangements were to be seen in the class for a vase or stand of hardy flowers and grasses, and here the awards were made in favour of Miss Newsham, Mrs. J. Jones, Wem: and Mrs. Green, Marche Hall.

Two classes were provided for table decorations and the competition was so keen that a special tent was requisitioned to hold the exhibits, in which, as also in the awards, the visitors took a close interest. Both classes were open only to ladies.

For an arrangement of any kinds of flowers except Roses, there were eleven entrants and the principal prize was won by Miss M. Powell, Barry, whose central, elevated arch was admirably arranged and tastefully decorated with flowers of Lilium Henryi, pale yellow Eschscholtzias, yellow Begonias, Francoa ramosa and Montbretias—a light, bright and elegant design. The second prize was won by Mrs. Alan Gibbs, for a pretty arrangement of Odontoglossums, Odontiodas and Thalictrum dipterocarpum, but the bases of her arch were lacking in finish; third, Mrs. J. Nixon, who used Cattleyas rather freely and associated these with Gesneras, Gerberas, Honeysuckle and Anthuriums; fourth, Miss Newsham.

Sixteen competitors came forward in the class for a table decoration composed solely of Roses and some of the arrangements were of very weird design. Mrs. J. Nixon won first prize with Emma Wright and Sunstar varieties very lightly and pleasingly arranged in dark wicker baskets. Mrs. Alan Gibbs had a somewhat similar arrangement and very similar receptacles, but her arrangement of flowers lacked the finish shown by the first prize exhibit; third, Miss Newsham, who had low bowls of light orange-yellow Roses; third, Mrs. Madeley, Wem, with low, dark bowls of deep salmon-pink blooms.

DECORATED FRUIT TABLE CLASS.

In the class for a decorated table of dessert fruit, the collection to consist of twenty-four dishes, in not fewer than nine kinds, there was, as last year, only one exhibitor; this was Lord Belper (gr. Mr. J. McCartney), Derby, who was awarded the premier award of £25 and a piece of Coalport china valued at fifteen guineas. The fruits shown were all in good condition, but the bunches of Grapes were small; the collection consisted of Black Hamburgh, Muscat of Alexandria and Madresfield Court Grapes; Dymond (2) and Bellegarde (2) Peaches; Humboldt (2) and Spencer (2) Nectarines; Ribston Pippin and Wealthy Apples; Louise Bonne of Jersey Pears (2); Kirke's Plums; Moorpark Apricots; and Frogmore Scarlet, Superlative and Ringleader Melons. Blush Carnations were used as floral decorations. The total points came to 149 out of a possible 194.

GRAPES.

The premier award of £20 offered for the best dozen bunches of Grapes, not more than four bunches of any one variety, was won by the Pwll-y-Crochan Hotel, Ltd. (gr. Mr. W. Owler), Colwyn Bay, with a splendid set, in which the clusters of Muscat of Alexandria and Madresfield Court were capital examples of high cultivation. The pointing was as follows:—Madresfield Court, 9, 8, 7½ and 7; Black Hamburgh, 9 and 7½; Buckland Sweetwater, 7½ and 7½; Muscat of Alexandria, 8, 7½, 8½ and 7½: total 95.

Second prize was awarded to the Earl of Strathmore (gr. Mr. D. McInnes), Glamis Castle, who lost points with his black Grapes the tips of several bunches showing some weakness—a few more berries would have improved them; the Muscat of Alexandria were well coloured, but in two of the bunches there was some unevenness in the size of the berries. Total points 91.

The third prize fell to R. J. Corbett, Esq. (gr. Mr. J. Jones), Towyn, who had shapely even-berried clusters of Muscat of Alexandria, Black Hamburgh, Gros Maroc and Madresfield Court, but the latter showed many red berries and in one bunch, a bad berry (86½ points). Lord Belper (gr. Mr. J. McCartney), Derby, obtained fourth prize (72 points), and W. H. Thickett, Esq. (gr. Mr. J. Irvine), Grimsby, came fifth (68 points).

The Earl of Lichfield (gr. Mr. G. Smith), Shugborough Hall, had the best four bunches of Grapes, showing Madresfield Court and Muscat of Alexandria in capital condition: second, the Earl of Coventry (gr. Mr. W. Wilson), Croome Court, had the best single bunch of Black Hamburgh Grapes; third, Col. M. Hughes, St. Helens. The same exhibitors occupied similar positions for a pair of bunches of this variety.

DESSERT FRUITS.

Three competitors came forward in the class for twelve dishes of dessert fruits, in not fewer than nine kinds, and here the first prize of £10 was won by Col. Heywood Lonsdale (gr. Mr. J. Mills), Shavington Hall, who led with Appley Towers and Muscat of Alexandria Grapes, of fair quality, and good dishes of Melons, Wealthy and Cox's Orange Pippin Apples, Lord Napier and Dryden Néctarines, Royal George Peaches, Williams' Bon Chrétien Pears, Brown Turkey Figs and Kirke's Plums. Second prize was won by the Hon. Viscount Hambleden (gr. Mr. W. Turnham), Henley-on-Thames, whose Grapes and Sea Eagle Peaches were in good condition. Lady Cunliffe Lister (gr. Mr. B. Gray), Swinton Park, was disqualified for showing three dishes of Peaches, but received a special award.

In the Shropshire County Class for nine dishes of fruit, Col. Heywood Lonsdale was the only exhibitor, and was awarded the first prize for Grapes, Peaches, Nectarines, Apples, Pear and Melons.

OTHER FRUITS.

In the single dish classes, Mr. R. J. Corbett led for Peaches with Sea Eagle; Lady Cunliffe Lister for Nectarines, with Pineapple; Mr. J. Barlow, Shelton, for Apricots, with Moor Park; Mr. R. J. Corbett for a green-fleshed Melon, with Hero of Lockinge; Col. Heywood Lonsdale for a scarlet-fleshed Melon; Mr. H. A. Grocott, Meole, for Gage Plums; H. H. Clayton, Esq. (gr. Mr. E. Lay), Bishops Stortford, for purple or red Plums, with Primate; Mrs. Finchett-Maddock (gr. Mr. G. Tyler), Carnarvon, for Morello Cherries, with the finest fruits of this variety we have ever seen.

SHROPSHIRE FRUIT CLASSES.

In the local county classes the Hon. Mrs. Winn, Cross Houses, showed the best Apricots; W. G. Phillips, Esq. (gr. Mr. W. A. Lee), Berwick Hall, the best Nectarines: Col. T. Dickin, Loppington, the best Peaches: Col. Heywood Lonsdale the best pair of bunches of white Grapes; Col. Dickin the best Plums; T. F. Kynnersley, Esq. (gr. Mr. W. Philly), Leighton Hall, the best Pears; Col. Heywood Lonsdale, the best pair of bunches of black Grapes; Lady Mary Herbert (gr. Mr. J. Birch), the best two bunches of Black Hamburgh Grapes; Mr. S. Withers, Shrewsbury, the best dessert Apples: Col. Hughes, the best cooking Apples: the Pwll-y-Crochan Hotel, the best white Grapes (Buckland Sweetwater); and Mr. W. G. Phillips, the best "any other" black Grapes.

The best collection of hardy fruits grown in Shropshire was the one from Col. Heywood Lonsdale, who showed Morello Cherries, Laxton's Perfection Red Currants, Lloyd George Raspberries, Victoria Plums, Jargonelle Pears and James Grieve Apples; second, Commander Robinson (gr. Mr. Roberts), Frankton; third, F. B. Bibby, Esq. (gr. Mr. J. Clark), Sansaw.

VEGETABLES.

The vegetable section was by no means the least effective one in this great show; the collections were especially fine.

Viscount Hambleden won the first prize of £7 and a Silver-gilt Medal in the open class for a dozen kinds of vegetables, showing excellent Onions, Leeks, Celery, Potatos, Tomatos, Runner Beans, Cauliflowers, Parsnips, Beet and Carrots; second, Mr. J. Jones, Ammanford; third, Mr. C. Kitchener; fourth, Mr. W. Robinson. In the open class for a collection of nine kinds of vegetables, the first prize was won by Col. Heywood Lonsdale; second, Mr. W. M. Watson; third, Mr. J. W. Beedlestone.

Mr. W. Robinson, Garstang, won the first prize for nine kinds, in the class provided by Messrs. E. Webb and Sons; second, Mr. T. Bowen, Aberamon. Messrs. J. Carter and Co.'s class brought out a keen competition, and here the best exhibit of six kinds came from Mr. T. Bowen; second, Mr. C. Kitchener; third, Mr. V. C. Vickers.

In Messrs. Clibran's class for nine kinds, the prize winners were Mr. W. Robinson, Mrs. Follard, and J. A. C. Roy, Esq. (gr. Mr. Falcon) Cheadle, respectively. Messrs. Dickson and Robinson provided the prizes in a class for nine kinds, and here the awards fell, in the order given, to Mr. T. M. Jones, Llandilo; Viscount Hambleden, and W. M. Watson, Esq. (gr. Mr. W. H. Jones), Clive Hall.

In Messrs. Sutton and Sons' class the competition was very keen; this was for nine kinds and Mr. T. M. Jones was the most successful competitor, showing excellent produce; second, Viscount Hambleden (gr. Mr. Turnham), Henley-on-Thames); third, Mr. V. C. Vickers.

Competition was also keen in the many single dish classes, and many very fine examples of various kinds of vegetables were exhibited.

AWARDS TO NON-COMPETITIVE EXHIBITS.

Awards of Coalport China.—Ten awards of Coalport China, each of the approximate value of ten guineas, were made to the following exhibitors:—Messrs. Dickson and Robinson, for Dahlias and Gladioli; the King's Acre

Nurseries, for fruit trees in pots and Roses; Messrs. Bakers, for an alpine garden; Messrs. Dobbie and Co., for Roses, Dahlias and Potatos: Messrs. E. Webb and Sons, for vegetables and flowers; Messrs. Sutton and Sons, for Gladioli; Messrs. James Carter and Co., for vegetables and flowers; Messrs. J. Peed and Son, for stove and greenhouse plants; Messrs. Jarman and Co., for Dahlias and Gladioli; and to Mr. W. J. Unwin, for Gladioli.

Large Gold Medals.—To Messrs. E. Murrell, for Roses; Messrs. Isaac House and Son, for Scabious; Messrs. Allwood Brothers, for Carnations and Dianthus Allwoodii; Messrs. Toogoods, for vegetables and flowers, and to Messrs. Hewett and Co., for Gladioli and other hardy flowers.

Gold Medals.—To Messrs. W. Simpson and Sons, for Antirrhinums; Mr. Amos Perry, for hardy and aquatic flowers; Messrs. Blackmore and Langdon, for Begonias; Messrs. J. Forbes, for Pentstemons and Phloxes; Messrs. J. Vert and Sons, for Hollyhocks, and to Lady Nunburnholme (gr. Mr. Kitchen), Warter Priory, for Ixoras.

Silver Medals.—To Messrs. Pritchard and Sons, for alpines; Mr. H. Ellison, for Ferns; Messrs. Rogers, Pickering, for alpines; Miss Thompson, for Cacti: Mr. E. J. Bayley, for floral designs; Messrs. Gibson and Son, for hardy flowers; Messrs. J. Russell, for Clematis: Messrs. E. Fairbairn and Sons, for Phloxes; Mr. H. Clarke, for Larkspurs; Messrs. Jones, Shrewsbury, for Gladioli; Mr. J. Jones, Wem, for Violas; Messrs. Waterhouse, for hardy flowers; Mr. C. Vickers, for floral designs; Messrs. Jeans and Trowbridge, for alpines; Messrs. F. Eames and Son, for hardy flowers; Messrs. J. Kelway and Son, for Gladioli; and to Mr. W. Wells, junr., for hardy flowers.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT.

Mr. Charles H. Curtis presided at the meeting of this Society, held in the R.H.S. Hall, on Monday, August 9. Five new members were elected. A grant from the Convalescent Fund was made to one member, and a special grant from the Distress Fund of £2 10s. 0d. to one member. A member over the age of seventy years withdrew the sum of £77 13s. 1d. from his deposit account, and another member withdrew £4 from the interest on his deposit account. The sum of £146 4s. 3d. was passed for payment to the nominees of three deceased members. Grants from the Distress Fund amounted to £34 12s. 6d. during July. The sick pay for the month on the private side amounted to £81 11s. 9d., and on the State side to £78 14s. 10d.; Maternity claims totalled £14 10s. 0d. Grants amounting to £15 3s. 6d. were made from the State section for dental and optical treatment, and nine other cases were considered. The Treasurer's financial statement showed a balance on the private side of £1,387 4s. 11d.

CUMNOCK HORTICULTURAL.

The committee of Cumnock Horticultural Society made a new departure this year when they instituted a summer show for Sweet Peas, Roses, Carnations, Pansies and Violas, in addition to the customary flower show in the autumn. The show was held in the Town Hall on the 14th inst, and the results fully justified the enterprising policy of the promoters. There were twenty-two classes for Sweet Peas, seven for Carnations, eight for Roses, and four for Pansies and Violas, but as this was an early season for Carnations and Roses were between seasons, Sweet Peas dominated the exhibits. The quality of the blooms was quite up to exhibition standard, particularly in the open classes, and the principal prize winners were as follows:—Messrs. Robert Keenan, James S. Henderson, David Blackwood, William Allan, Darvel; James Logan, Alex. McMillan and Tom Kay.

The best vase of a Sweet Pea in the section for growers with fewer than 150 plants was Powerscourt, staged by Mr. William Allan. Matchless, grown by Mr. A. McMillan, was likewise distinguished in the section for growers with fewer than 300 plants, while a vase of Cicely staged by Mr. James Blackwood in the open classes was adjudged to be the best in the section and the best in the show.

The baskets of Sweet Peas were uniformly good, and Mr. A. McMillan's decorative vase of Carnations was outstanding as an artistic production.

R. Wardrop was first with twelve Roses; Mr. James English excelled in the class for six blooms, which included a special award given to Frau Karl Druschki for the best Rose in the show.

Messrs. Ferguson Bros. and Angus Whiteford, New Cumnock, divided the honours in the Paeony and Viola classes.

ANSWERS TO CORRESPONDENTS.

Annual Flowers.—*E. W. T.* Sweet Scabious and Sweet Peas are hardy annuals, but Antirrhinums are certainly not annuals, although they are admitted as such in the schedules of certain exhibitions. In your case, however, unless they are so included, you should not exhibit them in a collection of annuals.

Antirrhinums Diseased.—*A. P.* Your plants are affected by the fungus Cercosporella antirrhini. All dead and dying plants should be removed and burnt and healthy specimens sprayed every two or three days with liver of sulphur applied at the rate of one ounce to three gallons of water in cool, damp weather, or one ounce in six or seven gallons of water in bright, hot weather. Dusting the plants and the surface of the soil from time to time with flowers of sulphur is recommended. Antirrhinums should not be grown a second year in infected ground.

Aquilegia Failing.—*G. R. S.* The spots on the leaves of the Aquilegia are apparently the work of some insect. Certain cells had peculiar contents, but close examination proved that these were not the result of a fungous attack. It would appear desirable to spray the plants with a nicotine or Quassia insecticide for the purpose of keeping the insects away.

Aster Seedlings Dying.—*F. B. C. and E. L. W.* The trouble is probably due to Black Neck or Wilt disease, caused by a fungus (Phytophthora sp.) present in the plant. All diseased Asters should be lifted and burnt and healthy plants sprayed with Bordeaux mixture.

Black Spot Disease of Roses.—*A. W.* Black spot of Roses is caused by the fungus Actinonema Rosae. All diseased leaves should be collected and burnt, and infected wood cut away. Afterwards spray the young leaves with Bordeaux mixture or liver of sulphur. Dusting with sulphur and lead arsenate powder has also given good results.

Compensation under the Agricultural Holdings Act.—*J. W.* Compensation in respect of improvements on the land can only be obtained under the Agricultural Holdings and similar Acts, provided the tenant has obtained the written consent of the landlord before building or executing improvements. If your glasshouse is resting on a foundation of brickwork in the ground but is not fixed to the freehold by being let into the ground, it is not a fixture and is removable even though it may have sunk into the ground by its own weight. If you are cultivating your land as a market garden or nursery and have erected your glasshouse for the purpose of your trade with the knowledge of your landlord, you have a common law right to remove it even though it is attached to the freehold. If, as seems likely from the facts as stated, your tenancy constitutes a holding under the Agricultural Holdings Act, 1923, you can remove the glasshouse provided you observe the provisions of section 22 of the Act, the more important of which are that all rent due to the landord must be paid before removal, no damage must be done and one month's notice in writing of intention to remove must be given to the landlord, in which case the landlord is entitled to give you notice of his desire to purchase the fixture at any time before the expiration of your notice.

Grape Muscat of Alexandria.—*A. A.* Good Muscat Grapes cannot be grown under the conditions you describe. The best you can do, as your border is below ground level, is to open out a trench in front of the border, three to four feet deep; carefully examine the drainage and replace about two feet of the border with good compost, bringing the roots nearer the surface where possible. Leave eighteen inches or two feet of space between the border and path, which will allow air to penetrate the border and permit watering and feeding to be carried out in a proper manner.

Names of Plants.—*W. A. B.* Aristolochia Sipho. *J. R.* Gladiolus Byzantinus. *F. J. F.* Strelitzia regina. *J. S. B.* Mimulus glutinosus. *E. R.* Astrantia helleborifolia. *J. C. B.* 1 and 2 are Hieracium aurantiacum the orange-coloured Hawkweed that creeps by means of stolons or short runners. *G. H. H.* Cestrum Newellii. *Charnwood.* Carpentaria californica. *Swansea.* Stigmaphyllon ciliatum. *W. S. L.* Populus tremula. *G. S.* 1, Sedum stoloniferum; 2, Olearia Haastii. *J. C. R.* Poor specimen, probably Lilium testaceum. *W. W. D.* Castanea Sativa (Spanish or Sweet Chestnut). *F. J. W.* 1, Artemisia lactiflora; 2, not recognised; send in flower. *O. G. W.* Colutea arborescens (Bladder Senna).

Rose Beetle.—*Miss H. C. W.* This beetle, known as the green Rose Chafer, is often very harmful to Roses and other plants, the adult beetles eating the petals and foliage of Roses, while the larvae feed on the roots. Hand-picking must be resorted to for the adult beetles which may be found in the blooms in cold and damp weather. The grubs may be trapped by removing the surface soil from around affected bushes and replacing it with grassy turves, placed upside down, which will attract the grubs. Naphthalene applied at the rate of two-and-a-half ounces per square yard should be forked in the soil in winter to kill the larvae. For the naphthalene to be effective, the soil must be moist.

Sweet Pea Freak.—*E. W.* It is by no means uncommon for Sweet Peas to show variation in colour and in form, and your specimen shows a form in which the colours have separated instead of assuming the usual combination of shading.

Tomatos Diseased.—*W. M.* The plants are affected with Tomato leaf mould caused by Cladosporium fulvum. Keep the atmosphere of the house dry and ventilate it freely. If the growth is dense trim a few of the leaves so as to allow the air to circulate freely. Dusting with sulphur powders will help to keep the disease in check, but will not cure it. A most effectual method of checking the spread of the disease is to use a sulphur vaporiser at regular intervals.

Communications Received.—H. C.—J. D.—A. J. M.—W. G. B.—A. E. F.—B. J. F.—W. A.—R. N. S.—N. C.—W. F. B.—A. T.—J. S.—Hortus.

MARKETS.

COVENT GARDEN, Tuesday, August 17, 1926.

We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Tuesday by the kindness of several of the principal salesmen, who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general average for the week preceding the date of our report. The prices depend upon the quality of the samples, the way in which they are packed, the supply in the market and the demand, and they may fluctuate, not only from day to day, but occasionally several times in the day.—Eds.

Plants in Pots, etc.; Average Wholesale Prices.

(All 48's except where otherwise stated).

	s. d. s. d.
Adiantum cuneatum per doz.	10 0-12 0
—elegans	12 0-15 0
Aralia Sieboldii	9 0-10 0
Araucarias, per doz.	30 0 42 0
Asparagus plumosus	12 0-18 0
—Sprengeri	12 0-18 0
Aspidistra, green	36 0-60 0
Asplenium, doz.	12 0-18 0
—32's	24 0-30 0
—nidus	12 0-15 0
Asters, in variety, 48's, per doz.	9 0-12 0
Cacti, per tray —12's, 15's	5 0- 7 0
Chrysanthemums, in variety, 48's, per doz.	15 0-21 0

	s. d. s. d.
Crassulas, 48's, per doz.	24 0-30 0
Crotons, doz.	30 0-45 0
Cyrtomium	10 0-25 0
Fuchsias, 48's, per doz.	12 0-18 0
Hydrangeas, white, 48's, per doz.	24 0-70 0
Lilium longiflorum (Harrissii) 48's, 32's per doz.	15 0-21 0
Marguerites, 48's per doz.	18 0-21 0
Nephrolepsis in variety	12 0-18 0
—32's	24 0-36 0
Palms, Kentia	30 0-48 0
—60's	15 0-18 0
Pteris, in variety	10 0-15 0
—large, 60's	5 0- 6 0
—small	4 0- 5 0
—72's, per tray of 15's	2 6- 3 0

Cut Flowers, etc.: Average Wholesale Prices,

	s. d. s. d.
Achillea The Pearl per doz. bun.	3 0—4 0
Adiantum decorum, doz. bun.	8 0-10 0
cuneatum, per doz. bun.	6 0—8 0
Asparagus plumosus, per bun., long trails, 6's	2 0—3 0
med. sprays	1 6—2 6
short	0 9—1 3
—Sprengeri, bun. long sprays	1 6--2 0
med. ,,	1 0--1 6
short ,,	0 4--1 0
Asters, white per doz. bun.	3 0—5 0
— coloured, per doz. bun.	8 0—5 0
Carnations, per doz. blooms	1 0--2 6
Chrysanthemums, white, per doz.	2 6- 3 6
—bronze ,,	2 0--2 6
—bronze per doz. bun.	6 0—9 0
—yellow, per doz. blooms	2 0—3 0
—yellow, per doz. bun.	6 0—9 0
Clarkia, per doz. bun.	4 0--5 0
Coreopsis, per doz. bun.	1 0--1 6
Cornflower, pink, per doz. bun.	1 6--2 0
—blue, per doz. bun.	1 3--1 6
Croton, leaves per doz.	1 9--2 6
Fern, French, per doz. bun.	10 0-12 0
Forget-me-not, per doz. bun.	6 0--8 0
Gaillardias, per doz. bun.	2 0--2 6
Gardenias, 12's, 18's per box	6 0--9 0
Gladiolus, primulinus, 6's, per doz. bun.	3 0—5 0
—various Giant varieties, per doz. spikes	0 9--2 0
Godetia, per doz. bun.	3 0--4 0

	s. d. s. d.
Gypsophila elegans	5 0--6 0
—Double paniculata	6 0—9 0
Heather, white, per doz. bun.	6 0 —9 0
pink, per doz. bun.	6 0—9 0
Lapageria, white, per doz. blooms	2 6--3 6
Lilium longiflorum long, per doz.	1 6--2 0
Lilium speciosum rubrum, long, per doz. blooms	2 6--3 0
—short doz. blooms	1 0--1 6
—lancifolium album, per doz. blooms	1 0--2 6
Lily-of-the-Valley, per doz. bun.	18 0-30 0
Montbretia, per doz. bun.	3 0--4 0
Orchids, per doz.	
—Cattleyas	30 0-36 0
Roses, per doz. blooms—	
—Madame Abel Chatenay	1 0--2 0
—Molly Sharman Crawford	1 0--2 6
—Richmond	1 6--2 6
—Columbia	2 0--2 6
—Golden Ophelia	1 6--2 6
—Sunburst	1 6--2 6
—Mrs. Aaron Ward	1 6--2 0
—Madame Butterfly	1 6--2 0
Scabiosa caucasica, per doz. bun.	4 0--5 0
Smilax, per doz. trails	4 0--5 0
Statice latifolia, per doz. bun.	10 0-12 0
—sinuata per doz. bun.	3 0--6 0
—Suworowii	6 0--9 0
Stephanotis, per 72 pips	3 0--3 6
Stock, double white, per doz. bun.	4 0—6 0
Sultan, white per doz. bun.	3 0--6 0
—yellow, per doz. bun.	3 0--6 0
—mauve, per doz. bun.	3 0—6 0
Sweet Peas, per doz. bun.	4 0--9 0
Violas	1 0--1 6

Remarks.—Owing to very moderate requirements, practically all subjects are over-supplied. Chrysanthemums, although much improved in quality, are difficult to clear. Asters are in excellent condition and good selection is on offer. There is an excessive supply of all outdoor blooms, which include some very fine varieties of Gladiolus.

Fruit Average: Wholesale Prices.

	s. d. s. d.
Apples, English—	
—Beauty of Bath, per ½ bushel	4 0-12 0
—Gladstone, per ½ bushel	2 6—5 0
—Grenadier	3 0—6 0
—Early Victoria, per ½ bushel	3 0—5 0
—Lord Derby, per ½ bushel	3 0—6 0
—Australasian Sturmer	12 0-16 0
—Granny Smith	30 0-35 0
—Statesman	9 0-10 0
—Californian Gravenstein	— 14 0
Apples, Italian, per box	10 0-12 0
Bananas	14 0-22 6
Figs, forced, per doz.	4 0-10 0
Gages, Spanish, per ½ sieve	8 0-18 0
—French	3 6--5 0
Grape Fruit	50 0-52 6
Grapes, English Black Hamburgh per lb.	1 0--2 6
—Canon Hall	3 0—7 0
—Gros Colmar	2 0--3 0
—Alicante	1 6--2 6
—Muscat	2 6--6 0
Lemons, Messina, per case	15 0-20 0
—Naples, box	15 0-20 0

	s. d. s. d.
Melons—	
—Forced Guernsey special	2 0--3 6
—Canteloup	2 0--6 0
—others	2 0--4 0
Oranges—	
—Californian	20 0-22 0
Pears, Williams's Bon Chretien (French)—	
—56's and 64's	— 9 0
—72's	— 8 0
—96's	6 0—7 0
—48's	3 0 -4 0
Peaches, Belgian, per doz.	3 0--6 0
—English, per doz.	4 0-12 0
—Italian, per tray	3 0--5 0
Pines	2 0--4 0
Plums, English—	
—Czar, per ½ sieve	3 0—4 0
—Orleans	4 0—5 0
—Green Victoria	2 6—3 0
Plums, French, per crate	3 0--4 0
—French, per ½ sieve	4 0--6 0
Raspberries—	
—Special dessert, per lb.	1 3--1 6
—per 4 lb. chips	3 0—4 0

Vegetables: Average Wholesale Prices.

	s. d. s. d.
Beans—	
—Runner, per ½ bags	2 6—3 0
Beets, per cwt.	6 0—8 0
Cabbage, per doz.	1 6—2 0
Carrots, new, per doz. bundles	2 0—2 6
Cauliflowers, per doz.	2 0—4 0
Cucumbers, per doz.	3 6—5 0
—Flats	12 0-16 0
Horseradish, per bundle	1 6—2 0
Lettuce, round, per doz.	0 9—1 6
Marrows—	
—per doz.	1 6—2 0
Mint	1 6—2 0
Mushrooms,	
—cups	2 0—3 0
—Broilers	1 0—2 0

	s. d. s. d.
Onions—	
—Valencia	7 0—9 0
Parsnips, per cwt.	5 0—6 0
Peas, English, per bushel	2 0—5 0
Potatos—	
—King Edward per cwt.	5 0—6 0
—others	4 0—4 6
Spinach, per bushel	2 6—3 6
Tomatos—	
—English, pink	4 0—4 6
—pink and white	4 0—4 6
—blue	2 6—3 0
—white	3 6—4 0
—Guernsey	3 0—3 6
Turnips, per cwt.	5 0—7 0
Turnip Tops, per bag	3 6—4 0

Remarks.—Trade on the whole is very unsatisfactory, there being an excess of practically every kind of fruit and vegetables.

GLASGOW.

The dull conditions which have characterised the cut flower market of late still prevail. Poor prices were realised during the past week, when Gladioli and Sweet Peas were sold at 1/- per box, and special blooms suffered in value with the cheaper qualities. A slight improvement was noticeable on Friday, but whether it is a merely a passing movement or an indication of better times to come remains to be seen. Chrysanthemums are becoming more plentiful, and as the season advances the quality of the flowers improves. Large, disbudded, white and bronze blooms were worth from 4/- to 6/- per dozen; pink blooms made 3/- to 4/-; while prices for ordinary sprays from out-of-doors ranged from 2d. to 4d. per bunch. The value of Gladioli fluctuated between 6d. and 1/6 per dozen. Carnations were a bargain at 10d. to 1/3 per dozen, and Roses also favoured buyers at 1/- to 1/9 for red and white, and 2/6 to 3/- for Madame Butterfly, Madame Abel Chatenay and Ophelia. Sweet Peas sold at 1/- to 2/6 per dozen bunches; Marguerites at 1/- to 1/6; Asters at 1/- to 2/-; Lilium longiflorum (Harrisii), 2/- to 2/6 per bunch; Asparagus Fern, 6d. to 9d. and Smilax, 1/- to 1/6.

Business in the fruit market was well maintained, and the general tone may be described as steady to firm. Jam Strawberries made 5d. to 7d. per lb, and table qualities, 9d. to 1/2. Home-grown Melons, 4/6 to 5/6 each, and locally-grown Peaches, 2/- to 6/- per dozen. The prices of Black Currants rose to 1/6 and 1/9 owing to scarcity; those for Red Currants averaged 8d.; Raspberries, 4/6 per chip of 14 lb; and Gooseberries, 2d. to 3d. per lb. Black Hamburgh Grapes sold at 1/6 to 1/9; Scotch Muscats 4/6, ordinary 3/- to 3/6; Cherry Plums realised 9/- to 10/- half-bushel; Dutch Grapes, 6/6 to 7/-; Spanish Gages, 16/- to 21/-; Egg Plums, 2d. per lb; Czar Plums, 3½d. to 4d.; and Prolific Plums, 3d. to 3½d. Pears are arriving in large quantities from abroad. Californian Bartlett Pears realised 8/- half-case and 14/- to 20/- per case. French Williams's Bon Chretien sold for 8/- to 10/- per crate; Beurré Hardy was worth 11/- to 12/-; and special Italian-grown Beurré Hardy, 6/6 to 7/6 (28's); Dutch Double Philips, 6/6 to 7/-; Wine 10/6, and Cherry 6/-. Melons found a ready sale at 16/6 for 24's, 19/- for 36's, 14/6 for water and bronze. Californian naval and seedless Oranges were worth 23/- to 28/- per case. Palermo Lemons were difficult to dispose of even at the low price of 3/- per box.

Vegetable supplies keep pace with trade consumption. Prices of Scotch Tomatos were steady at 8d. to 9d. per lb; Guernsey Tomatos made 6d., and Dutch Tomatos, 5d. Cucumbers and Cauliflowers realised 3/- to 6/- per dozen; Marrows, 4/-; Lettuce, 9d. to 1/6; Peas, 10/- to 12/- per cwt.; French Beans, 3d. to 4d. per lb.; Mint, 3/- per dozen bunches; Rhubarb, 6/- per cwt; Garlic, 10d. per lb; and Syboes, 3/- to 4/- per dozen bundles.

New season's Clover honey made 1/6 to 1/9 per lb.

TRADE NOTE.

Some little while ago, we obtained a specimen of the Willcox-Penberthy Water Gun, and after putting it to considerable use, we have come to regard it as practically essential for watering a garden when the hose has to be requisitioned for the purpose. The "gun" is so adapted that it may be fitted into a hose of any size, and there is no need to wire or tie it into position, while, owing to its formation, it is easy to hold and direct in accordance with the wishes of the operator. By a very easy method of adjustment the water may be distributed in the form of a jet or a fine, spreading spray and, of course, all grades of dispersal between those two. We have found it a most convenient implement and should be very sorry to be without it when dry weather necessitates the use of large supplies of water in the garden.

THE WEATHER IN JULY.

This was the warmest July since the Southport Observatory was established in 1871, but August has occasionally been as warm, and once (in 1911) was half-a-degree warmer. To the presence of easterly and other winds unusual in these two months, and to the marked failure of the due-westerly current proper to them, these infrequent hot months are chiefly due. Had it been winter time, severe frost might very likely have resulted instead. In the case now under review, the mean temperature was 63.3°, or exactly 4° above normal. Day and night contributed almost equally to the excess, yet only once (on the 13th) did the maximum thermometer rise to 80°, or above. Sunshine was remarkably deficient during the forenoons, but almost normally prevalent in the afternoons, many of which were extremely fine, with also some particularly good visibility. The aggregate sunshine for the month was 170 hours, or 36 hours below the average. Rain fell on 15 days, or one more than usual; and the total at Hesketh Park was 3·32 inches, implying an excess of 0·33 inch. A series of thunderstorms, culminating in a severe one towards midnight, occurred on the 18th. It is worthy of special note that the grass minimum thermometer never fell below 47° throughout the month. *Joseph Baxendell, Fernley Observatory, Southport.*

OATALOQUES RECEIVED.

Bulbs.

Hewitt and Co., Ltd., Solihull, Warwickshire.
Cooper, Taber and Co., Ltd., 90, Southwark Street, S.E. (Wholesale.)
Alfred Dawkins, 408, King's Road, Chelsea, S.W.10.
W. Cutbush and Son, Ltd., Barnet, Herts.
Little and Ballantyne, Ltd., Carlisle.
Fisher, Son and Sibray, Ltd., Handsworth, Sheffield.
Dickson's Seeds, Ltd., Chester.

Miss Stanistreet, Killaloe, Co. Clare.—Violets.
Fisher, Son and Sibray, Ltd., Handsworth, Sheffield.—Hardy trees, shrubs, etc.

GARDENING APPOINTMENT.

Mr. W. E. Wright, recently gardener to G. B. Blyth Esq., Stockton House, nr. Rugby, Warwickshire, and previously at Glenstaff Court, Pontyclun, S. Wales, as gardener to G. S. Frazer, Esq., Tregarth, Creigiau, nr. Cardiff, S. Wales. (Thanks for 2/- for R.G.O.F. Box.—Eds.)

STRIKE ISSUES OF THE GARDENERS' CHRONICLE

THE GARDENERS' CHRONICLE is one of the few weekly journals which were published in their normal form for every week of the strike. Readers who for any reason did not obtain copies of the issues for May 8, 15, or 22, and who want to keep their sets complete, can obtain them from the address below, price 7d. each, post free.

THE GARDENERS' CHRONICLE, LTD.
5, *Tavistock Street, Covent Garden, W.C.* 2

THE
Gardeners' Chronicle
No. 2070.—SATURDAY, AUGUST 28, 1926.

CONTENTS.

Abol challenge trophy, award of the ... 161
Abercrombie, John ... 173
Alpine garden—
  Astrantia minor ... 167
  Scabiosa graminifolia 167
Aquatic plants, forthcoming show of ... 162
Canadian Apple crop... 163
East Malling Research Station 161
Florists' Flowers—
  Sweet Peas for exhibition 166
Flower garden—
  Berkheya purpurea 167
  Green herbage for sun-baked banks 167
Fruit crops, remarks on the condition of ... 173
Fruit garden 174
Fruit register 174
"Gardeners' Chronicle" seventy-five years ago 163
Glasnevin, notes from 168
Hardy flower border—
  Campanula latifolia macrantha ... 166
  Hedysarum coronarium 166
Manchester Corporation and forestry ... 163
Orchid notes and gleanings—
  Bartholina pectinata 167
Obituary—
  Forrest, Mr. R. W. L. 179
  Vivian, Sir Arthur Pendarves ... 179
  White, Mrs. W. B.... 179
Potato crop, the ... 161
Presentation to a nursery employee ... 162
Shrewsbury show ... 162
Silver-leaf disease ... 176
Societies—
  British Gladiolus ... 176
  National Rose ... 179
  Royal Horticultural 176
  Scottish Pansy and Viola 179
  Southport Flower Show 178
Soils, the quality of ... 172
Species, the conception of a 172
Sweet Pea trials at Leith 162
Tree felling competition 162
Trees and shrubs—
  Carpentaria californica 166
  Eucryphia pinnatifolia 166
Ward's, Mr. F. Kingdon, ninth expedition in Asia 170
Week's work, the ... 164
Welsh garden, notes from a 168

ILLUSTRATIONS.

Apple Rosemary Russet... 175
Bartholina pectinata 167
Campanula latifolia macrantha... 163
Corydalis vesicaria 165
Eucryphia nymansay 177
Pentstemon cordifolius 168
Salaman, Dr. R. N. 162
Veratrum californicum 169
Ward's, Mr. F. Kingdon, ninth expedition ... 170–171

Average Mean Temperature for the ensuing week deduced from observations during the last fifty years at Greenwich 59·8.

Actual Temperature—
The Gardeners' Chronicle Office, 5, Tavistock Street, Covent Garden, London, Wednesday, August 25, 10 a.m. Bar. 30·3. Temp. 71°. Weather, Fine.

East Malling. Diminutives are a sign of affection and hence the abbreviated title of this article, which should in propriety be "The Research Station, East Malling and the Kent Incorporated Society for promoting Experiments in Horticulture," may be permitted, for, indeed, all those who are aware of the work which is being done by the Society and its Research Station hold a special and warm regard for the Institution. Although young in years, both of the Research Stations for the investigation of problems in fruit-growing have already done valuable work and give sure evidence of doing yet more in the future, and it must be a source of pride to the Ministry of Agriculture—if Government Departments share human weakness—to observe how their initiative in establishing these Institutions has borne fruit. And the sentiment must be shared by the many fruit growers, farmers and private growers who have with remarkable generosity lent financial aid to these Research Stations. We have before us the list of membership of the Kent Society and are glad to discover from its perusal how wide and vigorous is the support given to East Malling. As befits an Institution of this kind, the advantages of membership—which are real—are brought within the reach of all classes of persons. Anyone who desires to see the profitable extension of fruit-growing in this country may give practical effect to his desire according to his means. Those who are in a position to give one donation of £25 may become "Founders," or an annual subscription of ten guineas will secure them the privileges of annual founder members. For this subscription they receive the Annual Report and other publications issued by the Society. They share in the distribution of such plants as are sent out by the Station, an advantage of real value when it is remembered that since the establishment of East Malling there have been sent out no fewer than 200,000 fruit tree stocks true to name and of constant habit. Some 20,000 young fruit trees have also been distributed, as well as 50,000 truly named Black Currants and a not inconsiderable number of Raspberries. Nor does this by any means exhaust the list of privileges acquired by the Founder, and hence it is not surprising to learn that even in the relatively short time during which East Malling has been in existence, the rôle of Founders numbers nearly one hundred. Those who, though they desire to give practical support to the Station, cannot become Founders, may achieve the Fellowship of the Society by a single donation of fifteen guineas or an annual subscription of three guineas. There are already one-hundred-and-fifty Fellows and there can be no doubt but as the work of the Station and the advantages to be gained by Fellowship are more widely recognised, this number will be increased manifold. Those less well endowed with worldly goods may yet show their good-will and patriotism by becoming Associates, either by giving one donation of £10 or by an annual subscription of one guinea. Associates, it may be added, receive the Annual Report, which contains a most valuable summary of the work done during the year and consists in the present year of a well printed and illustrated brochure of one hundred pages. They also share in such plant material as may be distributed and have the right to consult the Station on matters relating to fruit-growing on which they may require advice. At present the Associates number nearly two-hundred and the total number of Founders, Fellows and Associates amounts to some three-hundred-and-thirty. Even more significant than this figure is the fact that the Society and Station enjoy both the official support of the National Farmers' Union and of the Horticultural Trades' Association and the personal support of many of the leading nurserymen in the country. Those who are disposed to add their names to the list of supporters of East Malling may be reminded that by so doing they literally give twice by giving quickly, for the Ministry of Agriculture and the Development Commission, which already give proof of their belief in the Station by the provision of a maintenance grant of £7,118, are, as we understand, prepared to increase their grant on the now well-known pound for pound basis. So though the pious benefactor will feel that in associating himself with the Station he is securing for fruit research not only the amount of his own subscription, but also an equal sum from the Ministry, he may also be assured that the money thus provided is needed and will be well spent. The best way of acquiring that assurance is by a personal visit to East Malling. He will find there a band of highly-trained, hard-working and enthusiastic men all devoted to their work and all engaged in discovering the solution to many of the problems which vex the mind of the grower. We who have had frequent opportunity to make the pilgrimage have never come away from East Malling without a renewal of confidence in the downright ability of Englishmen to hold their own and more than hold their own in the important work of advancing knowledge of fruit-growing. It has happened not infrequently in the past that agricultural and horticultural stations set out to demonstrate methods of cultivation have presented but sorry sights and balance sheets; but in the case of East Malling the sight of either is satisfying. Thus the receipts from the sale of produce for the last year amounted to no less than £3,636, £800 more than in the previous year, a proof that the Director and his staff know how to combine the "art and practic part of life." Assured, as we are, of the fine use which is being made of their opportunities by the East Malling staff, we venture to hope that everyone who desires to see fruit-growing become a great national industry, and who would like to see the growing of fruit in private gardens carried on yet more efficiently than it is at present, will lend their support, according to the measure of their means, to an institution which, though it bear a county title, has a national aim. If sufficient support be forthcoming, and we are confident it will be, East Malling and its elder brother, the Research Station at Long Ashton, will be able to fulfil the many and exacting demands which a progressive fruit-growing industry must make upon them.

The Potato Crop.—According to the Ministry of Agriculture, first earlies yielded well in eastern Potato districts, but in Lancashire and Cheshire, the crops were light as a result of damage by frosts during May. Over most of the country main crops are promising, the haulm being strong and healthy, but in some districts, including the important Potato districts in the eastern counties, crops which were not sprayed early have been attacked by disease, and prospects have deteriorated considerably. Over the whole country the average yield per acre is expected to be about equal to the ten year average.

Glut of Beans.—It is reported that in the Evesham district of Worcestershire dwarf and runner Beans are so plentiful and prices are so low that in many cases they are not worth gathering. Some growers have offered the Beans to those who care to gather them, while others have ploughed them in. The average prices at the end of last week were said to be 6d. to 1s. 6d. per pot. The slump is said to be largely due to unemployment and reduced purchasing abilities consequent on the coal strike.

Award of the Abol Challenge Trophy.—The competition for the handsome seventy-guinea Challenge Trophy offered by Messrs. Abol, Ltd., for the exhibit which should demonstrate the greatest advancement since the war in any one variety, species or family of plants, constituted the most important feature of the recent Staffordshire and Midland Counties' Show at Burton-on-Trent. Fourteen entries was a very creditable muster, for it must be borne in mind the whole scheme of such a competition was totally new in character, and there was quite naturally a considerable amount of uncertainty in the minds of would-be exhibitors as to the lines upon which so novel a competition might run. It cannot be too clearly recognised that the requirements of this competition bear no relation whatever to what might be termed the best exhibit in the show, either from the point of view of skilful cultivation or spectacular display; the single object is to encourage the plodding plant-breeder, and mark appreciation of real progress in the production of new, or the striking improvement of existing plants. The winning exhibit on this occasion was Messrs. Harkness's "Regal" Lupins, and the basis upon which the judges selected this exhibit was that it showed greater improvement in its own family than any of the other entries. The donors of the trophy intend that it shall, as year succeeds year, be allocated to different shows, at different seasons, but realising the disadvantages inseparable from the first effort, it has wisely been decided that the competition shall be again held at the same show next year. The strongest point of merit in the "Regal" strain of Lupins is that it embraces a wide range of delightful shades of colour which a few years ago did not exist in Lupinus polyphyllus. The exhibit which came closest in the final selection was a group of Gladiolus primulinus hybrids, and other subjects that followed closely were Mr. Hemsley's strain of Sidalceas, and Messrs. Isaac House and Sons' Scabiosa caucasica. Calendulas, Phloxes, Astilbes, Roses and a new bedding Zonal Pelargonium were among the entries in this year's competition, and it is something for British horticulture to be proud of that upon one date so many new plants of real merit could be brought together for public inspection and critical comparison.

Tree Felling Competition.—In connection with the annual meeting of the Royal English Arboricultural Society, a tree-felling competition has been arranged to be held at Newcastle-on-Tyne. The preliminary contests have already taken place, and the final is to be at the Forestry Commission's estate at Chopwell Wood, near Consett, on September 1, next.

Serious Forest Fire in France.—The *Daily Telegraph* states that considerable damage has been done by forest fires near Mont de Marsan in the Landes Department. Eight villages were concerned, and it required the efforts of all the inhabitants, with the assistance of a regiment of Senegalese infantry, to master the outbreak. They succeeded in saving a number of farms, but several were destroyed before anything could be done to protect them.

Shrewsbury Show.—We understand that the gross receipts in connection with Shrewsbury Floral Fête amounted to £14,600. On the Wednesday the gate receipts were £3,348, and on Thursday, £5,368, while tickets sold in advance brought in the sum of £2,370. Mr. C. Vickers, Leicester, was awarded a gold medal for floral designs, and not a silver medal as stated in our report of the Show.

Presentation to a Nursery Employee.—Mr. Alex. Holm, of Messrs. Waterer, Sons and Crisp's Knapdale Nursery, Woking, has been appointed superintendent of Messrs. Austin and McAslan's nursery at Cathcart in succession to Mr. Robert Prosser, who is now in charge of Springside Nursery, West Killride. On leaving the employment of the Glasgow firm, Mr. Prosser was presented with a handsome piece of silver plate from the partners, and a gold watch from the employees.

Forthcoming Competitive Show of Aquatic Plants.—The Secretary, Mr. A. E. Hodge, F.Z.S., 14, Astonville Street, Southfields, S.W.18, informs us that aquatic plants will form part of the Home Aquarium Exhibition which is to be held at the rooms of the British Sea Anglers' Society, 4, Fetter Lane, London, E.C., on the 24th, 25th and 27th of September. It is the first show of the kind in this country. There will be nearly two hundred tanks tenanted by many kinds of aquarium-fishes, from tropical and temperate climes, as well as other forms of aquatic life, both animal and vegetable, The primary object of the show is to demonstrate that, with suitable growing plants, a tank may be set up so as to be more or less self-supporting and, owing to the exchange of gases on the part of fishes and plants, independent of change of water. Species of aquatics rarely cultivated in aquariums will, apart from the more familiar Water-lilies and various other pond plants, be shown by professional and amateur growers, and the beauty of the specimens should bring home to visitors the possibilities of their culture.

Dr. Redcliffe Nathan Salaman.—As announced in our issue of July 17, p. 41, Dr. Redcliffe N. Salaman has been awarded the Snell Memorial Medal for the year 1925 by the Council of the National Institute of Agricultural Botany. It was awarded to Dr. Salaman in recognition of his eminent services "in the study of the problems connected with the breeding and diseases of Potatos." Dr. Salaman, whose portrait we have pleasure in reproducing, was born on September 12, 1874. He was educated at St. Paul's School, and Trinity College, Cambridge. He subsequently studied medicine at the London Hospital, and became director to the Pathological Institute of the London Hospital in 1901-1904. He resigned this position owing to ill-health and settled at Homestall, Barley, Royston, where he engaged himself in the study of genetics as applied to the Potato. His object was to analyse the hereditary characteristics of Potatos, and to obtain such knowledge of them as would help raisers in their endeavours to obtain the ideal variety. Of late years he has been engaged in such problems as the question of combating synonymity, and the prevention of virus diseases. He holds office as chairman of the Synonym Committee, and chairman of the Potato Committee of the National Institute of Agricultural Botany, of which he is vice-president, and he is in charge of researches in various diseases of the Potato, on behalf of the Ministry of Agriculture. Dr. Salaman is the author of numerous papers and books dealing with the Potato, including: "Male Sterility in Potatos." *Linnean Soc. Journ.*, 1910; "Inheritance of Colour and Other characters in Potatos," *Journ. of Genetics*, vol. 1, No. 1, 1910. "The Technique of Cross-fertilisation in Potatos," *Journ. Min. of Agric.*, vol. 27, No. 2, 1920 "The Inheritance of an Abnormal Haulm Type" (with J. W. Lesley), *Journ. of Genetics*, vol. V., No. 1, July, 1920; *Reports of the Potato Synonym Committee*, 1920-1925, Nat. Inst. Agric. Botany: "The Influence of Size and Character of Seed on the Yield of Potatos." (1) *Journ. Min. Agric.*, vol. 28, No. 1, April, 1921; (2) *Journ. Agric. Science*, vol. XII, pt. 2, April 1, 1922; "The Determination of the Best Method for Estimating Potato Yields, together with a further note on the Influence of Size of Seed on the Character and Yield of the Potato," *Journ. Agric. Science*, vol. XIII, pt. 4, Oct., 1923; "Genetic Studies in Potatos: Sterility" (with J. W. Lesley), *Journ. Agric. Science*, vol. XII, pt. 1, Jan., 1922; "Genetic Studies in Potatos; The Inheritance of Immunity to Wart Disease" (with J. W. Lesley), *Journ. of Genetics*, vol. XIII, No. 2, Aug., 1923; "A Leaf Index as a Help to the Identification of Potato Varieties," *Proc. Camb. Philosoph. Soc.* (*Biol. Sciences*), vol. I, No. 2, April, 1924 "Varieties of Potatos with their Synonyms Immune from and Susceptible to Wart Disease," *Nat. Inst. Agric. Bot.*, 1925; "The Inheritance of Cropping in the Potato," *Rept. Imp. Bot. Conf. London*, July, 1924; "Degeneration of the Potato: an Urgent Problem," *Journ. Nat. Inst. Agric. Bot.*, No. 3, 1925; "Genetic Studies in Potatos: McKelvie's Arran Victory Mutations," *Journ. of Genetics*, vol. XV, No. 3, July, 1925; and *Potato Varieties*, a book dealing with the genetic and other problems of the Potato (in the press). *Camb. Univ. Press*, 1926.

DR. REDCLIFFE NATHAN SALAMAN.

Legacies to Gardeners.—Amongst recent bequests we note that Mr. Robert Dixon Steele, of Thelema, Prenton, Cheshire, who died on April 19 last, left £500 to his gardener, Mr. Joseph Hughes. Amongst the bequests of the late Mr. Frederick Harrison, who for many years was sole lessee and manager of the Haymarket Theatre, London, is one of £100 to his gardener, Mr. Andrew Bicknell, whose son Andrew receives £25.

Famous Film-Actor-Gardener.—The late Mr. Rudolph Guglielmi or Valentino, the famous film actor, who died on the 23rd inst., was trained at the Dante Alighieri College, and the Royal Academy of Agriculture, Genoa, where he took an agricultural degree. He arrived in New York from Italy with high hopes of succeeding as a scientific farmer, but became apprenticed as a landscape gardener on the estate of Mr. Cornelius Bliss of Long Island. It is to the turning of this garden into a golf course that his meteoric rise to fame on the screen is due, for he failed to obtain suitable employment as a gardener and subsequently engaged in the film industry in which he attained the highest success.

National Dahlia Society's Exhibition.—The Secretary, Mr. W. J. Chittenden, 2, Dent's Road, Wandsworth Common, London, informs us that the annual show of the National Dahlia Society, which is to be held on Wednesday, September 8, at the Royal Horticultural Hall, Westminster, promises to be one of the finest ever held. It will be opened by the Rt. Hon. Viscount Ullswater, G.C.B.

Annuity to a Gardener.—Sir Thomas Skinner, Bt., The Gables, Worthing, who died on May 11 last, left an annuity of £52 to his gardener, Mr. Alfred Goddard.

Sweet Pea Trials at Leith.—On the invitation of Messrs. David Bell, Ltd., seedsmen, Leith, a large number of representatives of the seed and nursery trades in Scotland visited the trial grounds of the firm and inspected the stocks of flowers and vegetables. All the known varieties of Sweet Peas in commerce to the number of 250 are tested every year, and in certain varieties both English and American strains of seed are grown. The plants were grown naturally from seeds sown in the open on March 30, in soil that had not been manured, and no food of any kind had since been given the plants. Each row measured ten feet and contained two varieties in equal parts. Old grandiflora types were represented by Janet Scott, Helen Pierce, Mrs. Townsend, Aurora, Countess Radnor, Othello, Prima Donna, Miss Willmott and others, and it was interesting to learn that there was a considerable sale of these old favourites every year. Helen Lewis compared favourably with modern examples of that colour class, while Lady Grizel Hamilton still maintained its reputation for colour and fragrance. Half a dozen varieties of early-flowering Sweet Peas were disappointing in their results, as they only came into bloom on July 11, one week before the ordinary sorts. But the feature of trials was the number of too-much-alike varieties especially in the pink, maroon, blue, mauve and purple colour classes. As there had been a severe thunderstorm accompanied by a heavy downfall of rain during the preceding night, the blooms were not seen at their best, and in quite a number of varieties the colours had run. The stems, too, were getting short in most cases and the presence of a rogue in several new introductions was commented upon. Vigorous growth was reflected in many of the rows, and the presence of large, well-formed blooms, some of them four on a stem, suggested great possibilities when cultivated on the single stem system. Miss California and Magnet were the best Sweet Peas in the trials, and other outstanding varieties in their respective colours were Crimson King, Wembley and Austin Frederick; Bonfire, 2 LO, Pimpernel and Grenadier; Empire and Charming: Doreen, Guinea Gold and Wizard; Miss Philadelphia and Mrs. W. J. Unwin; Ivory Picture and Youth. Messrs. Bell had a seedling named Belford, of novel colouring. In the bud state it is a deep cream, almost yellow, and as it opens up the standard and wings assume a blush-pink shade which develops into a deeper tone with age. The flowers are large, well-placed and very fragrant. In the vegetable quarters the new Pea Chaucelot was the subject of favourable comment. It is a heavy main crop variety (three feet), and the pods, which are produced in pairs, contain eleven or twelve Peas of fine flavour. The company was afterwards entertained to tea.

Manchester Corporation and Forestry.—Arrangements have been made by the Manchester Corporation in connection with the afforestation of water-sheds, for planting a large number of Spruce seedlings. It is anticipated that in a few years young trees will have a ready sale as Christmas trees.

Holiday-maker Bitten by a Viper.—The *Daily Telegraph*, of August 21 last, reports that while Mr. Frederick Loughlin, engineer to the Liverpool Harbour Board, and his family were gathering Whinberries at Tynewiddion, above the famous Horseshoe Pass, he was bitten twice by a large viper which darted from the Heather. Mr. Loughlin is lying at Llangollen Hospital, suffering from the effects of the reptile's bites. Although healthy adults rarely, if ever, receive fatal injuries from the bite of a viper, the poison is very virulent.

Canadian Apple Crop.—According to the second Fruit and Vegetable Crop Report issued by the Fruit Branch of the Canadian Department of Agriculture on 15th July, the condition of the Canadian Apple crop indicated a commercial production of 3,046,000 barrels, which would be about five per cent. above the previous year's yield, but some eleven per cent. below the five year average. In British Columbia the crop promises to be the largest on record, the estimate being 3,525,500 boxes against 2,798,000 in 1925, and the previous largest of 3,330,000 boxes in 1923. An increased production is also anticipated in Nova Scotia, where the commercial crop is estimated at 979,000 barrels, against 890,000 last year, but in Ontario the expected yield of 774,000 barrels is nearly twenty per cent. below that of 1925. In Quebec and New Brunswick the production is estimated at 78,000 and 40,000 barrels respectively, the former figure representing an increase on the year of some 7,000 barrels, while the latter is about equal to the preceding year's yield. The report also states that owing to the lateness of the season in the eastern provinces, it is quite possible that prospects may still change materially.

Appointments for the Ensuing Week.—MONDAY, AUGUST 30: Royal English Arboricultural Society's meeting (five days). WEDNESDAY, SEPTEMBER 1: Glasgow and West of Scotland Horticultural Society's Show (two days); Abingdon Horticultural Society's meeting. FRIDAY, SEPTEMBER 3: London Allotment Show at the R.H.S. Hall (two days): Accrington and District Chrysanthemum Society's meeting: Alloa Flower Show (two days): Dalry (Ayrshire) Flower Show: Darvel Flower Show. SATURDAY, SEPTEMBER 4: Blackburn Horticultural Society's meeting; Glenfield and Kennedy, Ltd., Welfare Association's Autumn Show; Paisley Florists' Society's Show; Bannockburn Flower Show; Bearsden Flower Show: Cambuslang Flower Show; Cambusnethan Flower Show: Coldstream Flower Show: Crieff Flower Show; Dalrymple Flower Show.

"Gardeners' Chronicle" Seventy-five Years Ago.—*Dahlia Showing.*—Now that the Dahlia season may be considered as having fairly set in, I make no apology for offering a few observations on the subject of exhibiting Autumn's King, premising that what I have to say has been elicited by witnessing the opening exhibitions of the past few weeks, at the Surrey Gardens, Vauxhall, Birmingham Horticultural, West of England, at Salisbury, Trowbridge and Handsworth Societies; at each and all of which faults were glaringly committed, which, by ordinary care, might have been, for the most part, avoided. Let us begin at packing-up-time, previous to departure for the show, after months of toil and watchfulness. In the first place, see that each bloom be securely fixed in its plug, and that each plug perfectly fits the tube, which must contain a sufficient supply of water and no more. The plugs, if made of wood, should have been well soaked in water, otherwise they will absorb that which is placed in the tube, and the bloom will the sooner perish for the want of moisture. If the tubes are too full, injury is sure to occur after a long journey to the lower tier of blooms. If you cut and pack up over night select young blossoms in preference to more fully-expanded specimens; for how often do we find a board covered with the petals of a flower on which we had most depended and the oft-repeated exclamation heard, "Oh! that I had the nice young bloom of this or that variety, which I left behind." Greater attention is necessary to the state of the show-boards generally than is usually given them; no one except those who are censors can be aware of the shifts made to prop the boards up, both behind and before; bricks, tiles, blocks, in fact, every conceivable article but a leg firmly fixed in is resorted to. On a late occasion, with twenty-one collections competing in one class, the stands were of necessity moved up and down, here and there, in order that a fair comparison might be made, and by this system only can correct results be obtained. Whenever the board and flowers were moved out fell the a polog for a eg and in replacing the board on the table, over it went. These neglects alone injure the unthinking competitor. Arrangement of colour is a subject little considered by exhibitors, and yet this is a point of the greatest importance. Then again, how often do we observe the largest flowers in front. Always place the best specimens at the corners. Why? Simply because they are seen more than their neighbours, and therefore they are more criticised. Look to good centres. By good, I mean tight, unexpanded petals well elevated; these should form a close, compact and well-regulated mass, not less than the size of a sixpence; then, gradually opening, tier by tier, until the shoulder of the flower be formed of fully-expanded and symmetrically arranged petals. The fresher the back of the flower the more it will be prized; for although face and centres hold high positions, that flower must be considered far from perfect that has a withered or defective back. Confused and sunken centres are mostly the results of over-bloomed specimens; that is, the centre petals are too much expanded, a circumstance as much to be avoided as a green eye.—*J. Edwards, Gard. Chron., August* 30, 1851.

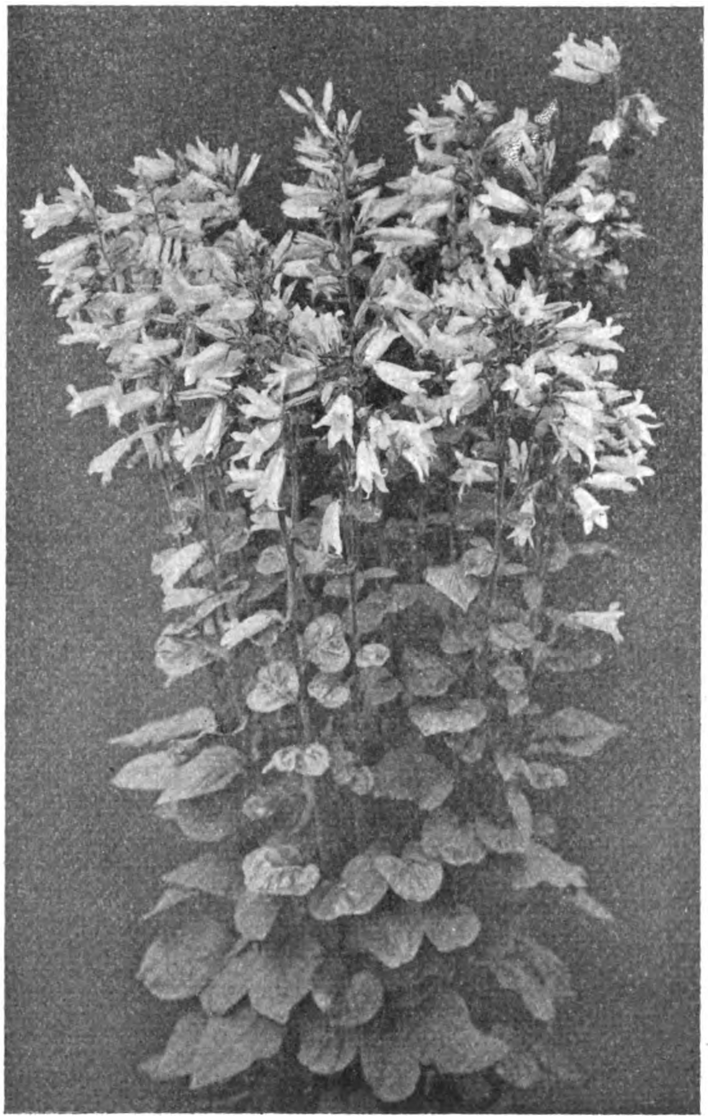

FIG. 78.—CAMPANULA LATIFOLIA MACRANTHA.

(see p. 166.)

The Week's Work.

THE ORCHID HOUSES.

By J. Collier, Gardener to Sir Jeremiah Colman, Bart., Gatton Park, Reigate, Surrey.

The Cool House.—The present is a suitable time to commence the re-potting of Odontoglossums. Few Orchids are so much appreciated as Odontoglossums of the crispum and Pescatorei types, and the numerous, beautiful hybrids obtained from these and other cool-house species. Where a large collection of these Orchids is grown there are always some in bloom, so that they will not all be ready for potting at the same time. Those which flowered early in the year are making new growth, and young roots will soon be pushing freely from their bases, so that if fresh rooting material is needed, it should be afforded forthwith. This will give them an opportunity of becoming established before the advent of winter. At this period and during September the air is usually of a genial nature, and a suitable atmosphere for the plants can be obtained with but little trouble. Any plants that are not at a suitable stage for repotting should not be disturbed but should be dealt with at a later period when the growths are at a suitable stage for the operation.

Repotting.—This is an important detail in Orchid cultivation and much depends on when and how it is carried out. It is essential that the pots should be thoroughly clean and well-drained, to ensure a free passage of water. Over-potting should be guarded against. As a general rule, the most vigorous plants should be afforded larger receptacles and a rougher compost used than for those that are weakly. Remove all useless back pseudo-bulbs, leaving at least two behind each leading shoot, and pot with moderate firmness, keeping the base of the young growth about level with the rim of the pot. Such plants as may have become in bad health through over-flowering, by carrying seed pods, or other causes, should be turned out of their receptacles, and when thoroughly cleansed, placed in pots as small as will just accommodate them. A suitable compost for these cool-house Orchids consists of Osmunda fibre and A.1 fibre cut into short portions, with a sprinkling of crushed crocks, the whole mixed together. The newly-potted plants should be staged together in the house so that their individual requirements may be studied, especially in regard to watering and shading. For a month or two after root disturbance great care in the application of water will be necessary; a surface watering with a rose can will generally suffice.

THE KITCHEN GARDEN.

By F. Streeter, Gardener to Lord Leconfield, Petworth Park, Petworth, Sussex.

Celery.—Special attention should be given to Celery. Keep all side-growths removed and the roots well-soaked with water, using liquid manure on alternate waterings. Keep a sharp watch for Celery Maggot, picking off and burning each infected spot so soon as it is visible. The earliest rows are ready for blanching; for this purpose I find nothing to equal brown paper, about four inches in width, and placed loosely around the base of the plants, with a little fresh, fine soil over the bottom of the paper to keep it in position. Dust the rows with soot on frequent occasions as soot is a fine stimulant for Celery. Continue to plant out the latest sowings which, if the winter is wet and cold, will provide small heads in March and April.

Cauliflowers.—It is advisable to go over the Cauliflower beds daily and either tie the leaves over the curds or merely twist a leaf over the head to ward off the sun's rays and strong light. Watch for caterpillars, which should be removed daily. See that the plots are well-mulched with manure and give the plants copious supplies of water during hot weather. A sowing should now be made to provide plants that will withstand the winter. Sow the seeds thinly and evenly on fairly firm ground that is not too rich in manure, and endeavour to grow the plants as hardily as possible until they are ready for pricking out into cold frames. Place a piece of old netting over the beds to keep small birds away.

Spinach.—Sow a considerable breadth of Spinach to withstand the winter. Victoria is still one of the finest type; The Carter is also a good sort, furnishing splendid young leaves of fine quality. Select an open site which has been well-cultivated for the previous crop, and if the soil is deficient in lime a good dressing of this material will prove of great assistance to the plants. Sow thinly and thin the seedlings finally to nine inches or one foot apart. Keep the ground hoed and thoroughly clean.

HARDY FRUIT GARDEN.

By W. Auton, Gardener to Viscount Elveden, Pyrford Court, Woking, Surrey.

Wall Trees.—Attention should be given to all fruit trees on walls from which the crop has been gathered, for any neglect at this season may seriously affect next year's crop. If aphides or other insects are present, spray with a suitable insecticide to destroy them, but if the fruits have been gathered it is much easier to keep the foliage clean by daily syringing with clear water. Tie in shoots that are needed for extension, and remove all growths not required. See that the borders do not suffer from lack of moisture; trees which have borne heavy crops and show signs of exhaustion may be assisted by applications of diluted liquid manure. This stimulant should not be applied when the borders are dry; they should be soaked with clear water first to ensure the soil being in a moderately moist condition.

Loganberries.—When the fruits have been gathered the old growths should be cut out, and the current year's growths trained in their places. The new growths are much easier manipulated now than if left till the winter, and the removal of the old canes admits light and air and facilitates the ripening of the new wood. If increase of stock is needed, serpentine layering may be practised with a few of the long growths which may not be required for tying in, but it is essential that the layers should be kept continuously moist during the remainder of the season.

Gathering Fruits.—The gathering of fruit requires care and discrimination which can only come from long practice, and is a most interesting and important work considerably influencing the value of the total crop. With early and mid-season varieties of fruit there is often ripe and unripe fruits on the trees at the same time. By gathering the ripe fruits only, relief is given to the tree to that extent, and the remaining unripe fruits receive the benefit of further nourishment to the great advantage of the crop and considerable increase of weight. In gathering Apples, Pears and Plums, the stalk should be taken intact, for not only is the stalk a permanent characteristic of variety and presents the fruit to better advantage, but it is also a safeguard against premature decay. This applies particularly to Pears and Plums, for if the stalk of these fruits is torn out, a portion of the skin is sure to be damaged, and the interior of the fruit is at once exposed to the spores of disease, which are nearly always present. Once these have gained access to the flesh of the fruit they quickly take possession, and at this season of the year, when temperature and atmospheric moisture are favourable to their growth, rapidly bring about total decay. Peaches and Nectarines need the most careful handling, as the slightest pressure on the flesh causes breaking down of the cells and initiates decay. The practiced eye can almost tell at a glance which fruits are ready to gather and thus obviate unnecessary handling and bruising.

Hoeing.—Use the hoe freely on all fruit quarters not mulched. It is important at this season to get rid of all weeds before they mature seeds.

THE FLOWER GARDEN.

By F. C. Puddle, Gardener to Lord Aberconway, Bodnant, Taly-Cafn, North Wales.

Eremuri.—The present is the most suitable time to divide and transplant these stately subjects. The stools should not be allowed to become overcrowded but lifted for dividing every few years. In the case of the strong-growing species, such as Eremurus robustus, E. Elwesianus, E. himalaicus and their hybrids not more than three crowns should be allowed to develop before division takes place; but the later-flowering Eremurus Bungei, E. Warei, and hybrids of these species do not carry such luxuriant foliage, and clumps of four and five crowns may be allowed to develop before dividing them. The finest spikes are produced when the plants have one or at the most two strong crowns. Great care should be taken in lifting the plants, as the thick, fleshy, brittle roots radiate from the crowns with a slight tendency downwards, like the ribs of an open parasol, and it is advisable to rake away the soil carefully until the roots are exposed before attempting to lift them. The crowns will be found to divide quite readily without the use of a knife, but any roots which may have been accidentally broken should have the broken ends cut clean and sealed over with a little dusty lime to prevent rotting. Eremuri are sun-loving plants and grow well in a well-drained, moderately rich soil. Efficient drainage is essential to their success. In cold and wet districts where the soil is inclined to be heavy, it should be lightened by the addition of sand or some similar material. In such cases it will also be found an advantage to excavate the soil and put in a drainage composed of clinkers or broken bricks, thus raising the bed above the surface of the surrounding soil. When planting the crowns a hole should be taken out rather larger than the full extent of the roots. A mound of sandy soil should be made in this and the plants placed on it, so that the upper part of the crown is just level with the surface soil, and the roots radiating from it on a downward incline, thus ensuring that the extreme ends are about four inches deep. A sunny, sheltered position is a great asset in the cultivation of Eremuri, as the flower spikes are very liable to be injured by spring frosts just as they commence to develop; this injury is frequently aggravated by water lodging in the centres of the plants, and if provision can be made to protect them for a few weeks after growth commences, it will be an advantage to the plants.

Tulips.—If it is intended to transplant Tulips, but the bulbs have (owing to stress of other work) been left in the ground, they should be lifted and replanted forthwith. Bulbs which have been in the ground until this date should not be dried or stored as it is very possible that the roots have commenced to develop, and if the tips of these are shrivelled the bulbs will sustain a great check. Bulbs which have been properly harvested and stored may be left until the end of September or the beginning of October before replanting them. Tulips should, if possible, be given a change of ground at least every second season, but it is often very difficult to do this in the case of May-flowering Tulips which are planted in mixed borders. In making a selection of varieties for such positions it is well to bear in mind that the cottage Tulips are more reliable than Darwins when left undisturbed, for they usually thrive and multiply, whereas the Darwins will gradually but surely decrease. A frequent change of soil is very necessary for the well-being of Darwin Tulips.

FRUITS UNDER GLASS.

By T. Pateman, Gardener to Sir Charles Nall-Cain, Brocket Hall, Hertfordshire.

Peaches and Nectarines.—Trees planted out and growing in borders in unheated houses will, in some cases, have had the fruits removed. Most of the mid-season and later varieties will, however, be ripening their fruits, and when the latter begin to colour spraying should cease until the fruits are gathered. The amount of water afforded the roots should be gradually reduced, but not to such an extent as would cause absolute dryness of the border. The flavour of the fruits will be greatly enhanced, however, by keeping the borders slightly on the dry side. Admit air freely when the outside conditions are favourable, and leave the top and bottom ventilators open a little at night to allow superfluous moisture to escape. The fruits on the later trees should be exposed to the sun and this is best done by tying back the leaves that obstruct the sun's rays. Trees from which the fruits have been gathered will require attention in taking out the old fruiting wood. This operation is best done as early in the season as possible in order that light and air may enter the tree freely and ripen the young shoots that will produce next season's crop. Trees that are weakly or have carried heavy crops should be given liquid manure, or, failing this, small quantities of a concentrated fertiliser. As the trees have their crops taken from them, syringe them vigorously to keep down insect pests.

Pears.—The fruits of Pears growing in unheated houses need supporting, as some of the large varieties are too heavy for self-support. The best method is to secure the stalks with a piece of small string or strong bast to the current year's growths; some growers utilise bags or fish-netting to support the fruits, but these methods are liable to cause markings on the fruits, especially those of high colour. Should birds prove to be troublesome, the ventilators should be covered with small-mesh netting; this will prevent tom-tits, which are very destructive among ripe Pears, from attacking the fruits. Pinch the lateral growths as they appear and keep the borders moist until such time as the fruits are ripening, when watering should be reduced somewhat. Admit plenty of fresh air both night and day on every possible occasion.

PLANTS UNDER GLASS.

By John Coutts, Assistant Curator, Royal Botanic Gardens, Kew.

Souvenir de la Malmaison Carnations.—The layers, if well-rooted, should be lifted and placed in suitable-sized pots, according to the quantity of roots they have made, but generally forty-eight sized pots will be found most suitable. The compost should consist of a medium, well-matured loam, with sufficient old mortar rubble and sand to render the texture open and porous, adding one forty-eight potful of bone-meal to every bushel of soil. If the loam is heavy it is advisable to add a little leaf-mould to the compost. Firm potting is essential; after potting them the young plants may be placed in cold frames or in a cool house, where it may be necessary to shade them for a few days from bright sunlight, but after they have grown freely at the roots they should be exposed to light and air.

Gloriosa superba.—This and other species of Gloriosa that are completing their growth should have water gradually withheld at the roots. When dried off the plants should be stored in a warm, dry place.

Richardia africana.—Where cut spathes of this plant are in demand early, or the plants required for furnishing purposes, the plants, whether they have been kept in pots or planted out, should be potted forthwith. Where they are grown exclusively for supplying cut blooms, it is a good plan to pack them in boxes, instead of growing them in pots. The size of the pots will vary according to the purpose for which the plants are required; if large specimens are needed, ten-inch or twelve-inch pots are necessary, and several plants may be placed in the larger sizes. Single plants, grown in six-inch pots are very useful for decorative purposes. Richardias are gross feeders and should be grown in a rich compost. After potting them they should be stood in a cold frame or a cool house, and watered carefully until they have made a quantity of new roots.

Perpetual-flowering Carnations.—If these Carnations have been stood out-of-doors for the summer they should be housed towards the end of the present month, as too much moisture on the foliage is apt to start rust, especially on some roots, such as Carola, a variety which should never be placed out-of-doors.

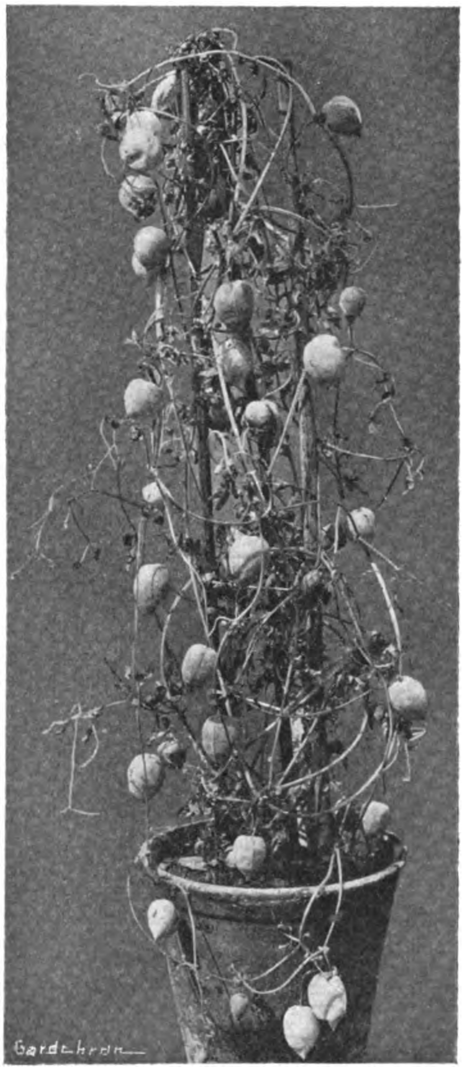

FIG. 79.—CORYDALIS VESICARIA.
(See "Notes from Glasnevin," p. 169).

Aristea corymbosa (syn. Witsenia).—This beautiful, blue-flowered, South African plant, although belonging to the natural order Irideae, may be described as a hard-wooded, greenhouse plant. It is generally regarded as being difficult to propagate, but it may be propagated more or less successfully during spring and summer, and the present is a good time to insert cuttings in pots of sandy peat, made fairly firm, afterwards standing them under a bell glass in a cool greenhouse, or the cuttings may be rooted very successfully in a sand bed, made on the top of a solid bench of soil or ashes in a cool pit. The cuttings should be made from the side shoots when they are from three inches to four inches in length; it is important that they should be lifted from the bed and placed in small pots before the fleshy roots are too long, otherwise there is great danger of injuring them. This plant should be grown in a well-drained soil composed of lumpy peat, a little light loam, and sufficient sand to render the texture open and porous.

FOR NORTHERN GARDENERS.

By A. T. Harrison, Gardener to the Marquis of Ailsa, Culzean Castle, Maybole, Ayrshire.

Violets.—Violets for winter-flowering should be transferred to frames; if the runners have been kept pinched off regularly the plants should now have good, single crowns, which, if lifted carefully with good balls, will bear transplanting with small loss of foliage. It is a good plan to go over the bed or border in which they have been growing and make a selection of the best plants, and at the same time run a spade around them, severing most of the roots, and leave them thus for a few days; if the weather is very dry water should be given, but in showery weather they will take no harm, and when the actual lifting occurs, it will be found that plants prepared in this way transplant much better than those not prepared. Some of the old soil should be removed from the frame and the bulk made up with good, turfy loam and leaf-mould, to which should be added a generous dusting of soot and wood-ash, keeping the soil well up, so that the foliage of the plant is about six inches from the glass. A copious watering should be given to settle the soil around the roots. Mats should be spread over the sashes in the middle of the day, but air should be admitted to the frames to the fullest extent both night and day unless frost occurs.

Celery.—The final earthing-up of early Celery should be done forthwith, and where the plants have been tied and partially earthed-up earlier, this operation is more speedily concluded. Later crops for winter use should also now be prepared by removing side leaves and shoots, and, if ready, given a preliminary earthing up of a few inches of soil. Before doing this, it is a good plan to supply a top-dressing of some suitable fertilizer, and water the same well in. If slugs are troublesome give the soil when it is broken up, a heavy dusting of either soot or lime, mixing the same with the soil as the work proceeds. The newer method of watering with a solution of alum might prove a boon to those who find their Celery disfigured year by year by slugs, as it is said not only to destroy the adult, but also the eggs of these insidious vermin.

Clarkias, Schizanthus, etc.—These annuals are largely grown for a display in the greenhouse in spring, and seedlings raised from seeds sown in September and grown on under cool conditions during autumn and winter, are capable of producing an enormous wealth of flowers. The seedlings should be pricked out so soon as they are ready, and kept well up to the glass in order to lay the foundation of sturdy plants. Repot them from time to time as the pots they are occupying become filled with roots. Specimen plants for the conservatory may eventually require ten-inch pots, but very useful specimens may be grown in six-inch and seven-inch pots, if they are fed regularly either with liquid manure or a concentrated fertiliser when they have become well-rooted in their flowering pots. The comparatively new Calceolaria hybrids, which have been raised in the Glasgow Botanic Gardens, are also useful plants for a spring display under glass, and may either be raised from seeds sown earlier in the year or from cuttings inserted now. These, while not so large-flowered as C. herbacea, produce flowering stems from two to three feet high. Some very pretty spotted and self-coloured forms and named varieties are obtainable, one of the best and brightest being named after the raiser, Mr. G. H. Banks, whose efforts in hybridising this and many other flowers have been crowned with success.

HARDY FLOWER BORDER.

CAMPANULA LATIFOLIA MACRANTHA.

WRITING of this beautiful form of our native Giant Campanula, Mr. E. A. Bowles in *My Garden in Summer*, states, "Just when they are at their best it is hard to beat the various forms of C. latifolia, such as its variety macrantha, both purple and white." This is, indeed, high praise from such a keen lover of beautiful flowers of a plant which was illustrated in the *Botanical Magazine*, t. 2553, so long ago as 1825.

The variety macrantha (Fig. 78) has larger flowers than those of the type, and stems and leaves which are more pilose. It originated in Russia, for the seeds of this plant were received by Mr. Anderson of the Botanic Garden, Chelsea, from Dr. Fisher of the Imperial Botanic Garden, Petrograd, formerly known as St. Petersburgh.

C. latifolia macrantha is a first-rate plant for the hardy herbaceous border, producing its deep purple flowers, as is shown in the illustration, in great profusion; the individual blossoms are much larger than those of the type. There are several forms of C. latifolia in cultivation, including the varieties alba, Burghaltii, Van Houttei and versicolor. The white variety is a very useful plant, and all the forms named contribute to the attractions of the flower border in mid-summer. This Campanula grows well in any ordinary garden soil, and is easily increased by division of the root stocks. *T.*

HEDYSARUM CORONARIUM.

BEARING the common name of French Honeysuckle, this very old plant is but seldom seen in gardens at the present day. It is of perennial habit and a native of south-west Europe. It is not quite hardy in many districts, but is easily raised from seeds, which, if sown about July and the seedlings wintered in a cold frame, produce good plants by the following spring. Hedysarum coronarium likes an open, sunny position on rich, deeply worked soil. Well-grown groups in the herbaceous border are always a source of attraction when covered with spikes of the deep-red, Pea-shaped flowers, which continue in bloom over a long period. *R. F.*

TREES AND SHRUBS.

CARPENTARIA CALIFORNICA.

THERE is a refinement and an air of quality about this shrub which—quite apart from its singular beauty—never fails to arrest attention. It may be the curiously smooth, Cucumber-green of the elegant, lanceolate leaves which, making such a pleasing background for the flowers, hold the secret of this strange appeal. But the blooms are themselves intrinsically lovely. Opening flatly, nearly three inches across, pure white and suggesting to the average eye those of the Japanese Anemone, these exquisite flowers appear in large clusters in June and continue for a couple of months. Individually, they remain open for a longer period than do most single flowers (I have known one to persist for a fortnight), and they have a delicate fragrance which suggests new-mown hay.

Though it will grow twice as tall, C. californica is generally seen as a shrub from four feet to five feet. It is evergreen, by no means difficult to grow in any light loam, with full sun, and it may be propagated by cuttings, or from the seeds which it usually produces in plenty. There is no doubt that it is a lime-lover, and I am inclined to think that it is one of the many subjects which like to grow among others, rather than isolated. In its own country, the finest specimens I saw were invariably crowded in thickets of shrubs of rather less than their own height, and the same treatment has worked well here. As to its hardiness, I may state that C. californica has never been injured with me, not even by 20° of frost.

Carpentaria californica does not flower well in all gardens and there was at one time a current belief that there were non-flowering strains about. I have certainly had some plants which have never bloomed, though otherwise healthy and vigorous. *A. T. J.*

EUCRYPHIA PINNATIFOLIA.

THIS Chilean shrub, or small tree, is again covered with its white flowers at Wisley, and, planted against a deeply-coloured form of Prunus Pissardii, the effect is very striking. This is the finest of the Eucryphias for garden purposes, and it is unfortunate that it is not more frequently planted, as it is fairly hardy, and when once established and grown into a fair-sized shrub, it flowers freely every year. It seems to like a moist soil with the addition of peat and leaf-soil, while in the young state, and it is greatly benefited by an annual top-dressing of leaf-mould to keep the surface roots cool and moist.

Eucryphia cordifolia is much more tender than the foregoing, and is only to be found doing well in the milder districts. This species is a handsome evergreen, where it succeeds. There is a fine specimen of it, about thirty feet high, at Castle Kennedy in Wigtonshire, where it flowers and sets seeds freely every year. This specimen is growing on a thin, gravelly soil, and has the advantage of a heavy rainfall, good drainage and plenty of decayed leaf-mould. Judging from the yearly growth it makes, these conditions seem to be ideal, yet under the same conditions, and not ten yards distant, E. pinnatifolia is found to be a more difficult subject to deal with, being much slower in growth and never having the same vigorous appearance as the more tender species. *R. F.*

FLORISTS' FLOWERS.

SWEET PEAS FOR EXHIBITION.

THOSE who grow Sweet Peas for exhibition will already have decided which varieties they intend to cultivate next season There are, however, many small growers who have not had the opportunity of seeing a really first-class exhibition of Sweet Peas; also many who pin their faith on a spring sowing made out-of-doors and allow the plans to grow at will without thinning the shoots or disbudding.

The cultivation of Sweet Peas as cordons is on the increase. Those who have tried the system have realised its advantages, chief of which is the extended flowering season, which the plants enjoy. Disbudding and tying are details which take up a certain amount of time during a busy season, but there is less labour needed for the removal of faded flowers and seed-pods than is necessary when the older system of cultivation is followed. Plants grown in well-trenched ground and trained as cordons set few seeds and most of the flower spikes are suitable for using for house and table decorations. Those who are desirous of a maximum return for the labour expended will not neglect to sow their seeds during the first few weeks of October.

The seeds may be sown in boxes or pots, those of five-inches diameter being the most suitable size. The boxes should be at least four inches deep and well supplied with holes for drainage. Old potting soil may be sifted and used, or, better still, if an abundant supply of loam and decayed leaf-soil is available, sufficient of these materials may be passed through a half-inch seive and mixed in the following proportions; loam three parts, leaf-mould one part, with sufficient sharp sand to render the texture of the compost open. A four-inch pot full of air-slaked lime and a similar quantity of wood-ash should be added to each bushel of compost, but these materials need not be added if old potting soil is used, as this generally contains a certain amount of manure. but damping off of the seedlings is liable to occur in cases where old potting soil is used.

The soil should be sufficiently moist to ensure the seeds germinating without the application of water. After the pots have been adequately crocked to ensure good drainage, they should be filled with the compost, pressed lightly with the fingers to within one inch of the rim.

Place six or seven seeds around the edge of the pot and cover them lightly with soil. As each variety is completed label the box carefully with a number or name. The best place in which to raise the plants is a cold frame, which should be mouse-proof when closed, as these rodents are partial to the seeds and may do much damage before they are detected or caught.

The placing of sheets of glass over the pots conserves the moisture, but these should be removed promptly as germination takes place. Placing a mat over the frame for shading is also to be recommended. The use of boxes has certain advantages, one of which is that the roots do not get entwined to the same extent as do those which are grown from October to the end of March in pots.

When planting-out time arrives, no attempt should be made to dig the plants out of the boxes with a trowel Each box may be lifted as required at an angle of 45° or so, and each side and end of it brought into sharp contact with the ground until the soil leaves the sides of the box, then, with a deft throw, made as near the ground as possible, the whole of the contents may be deposited on the garden.

The plants may be removed with a slight shaking and will retain sufficient soil on the fibrous roots to obviate a severe check to growth.

The selections of the Floral Committee of the National Sweet Pea Society are a good guide. For those who have not this list at hand the following selection, which does not in all cases agree with that of the Floral Committee, may prove helpful.

Almost without exception, ladies admire lavender and maroon coloured Sweet Peas. Of the former colour, Austin Frederick Improved is suitable, for this variety has great vigour, length of stem and substance. Wembley is a pleasing shade of pale lavender-blue. The Sultan is a very deep maroon variety possessing vigour and great length of stem. The latter quality is lacking in Warrior, which has usually a larger flower.

Constance Hinton is firmly established in the exhibitor's favour, and shown frequently. Purer-coloured stocks of this sort are sent out now than formerly. Among cream colours, Matchless is all its name implies. An introduction of last season, Leslie Rundle, is most vigorous in growth and produces flowers on long, stout stems, qualities hitherto lacking in this section. It is sure to have many admirers, but the colour is not so rich as that of Matchless.

Mrs. A. Hitchcock and Comrade are two pale pink varieties of great merit and make excellent exhibition bunches. Charming is a deep cerise variety which has no series rival in its particular section. Among cerise scarlets, Grenadier and 2 LO are both worthy of attention. The former produces the larger flowers, but 2 LO is exceedingly rich in colour.

Charity is still the finest crimson variety, but this colour is not often satisfactory for exhibition. Several rich pink varieties are available, Miss California, Queen of Roumania and Britannia are all first-class and of pleasing shades which combine well with the lavender-coloured varieties.

Picture and Hebe continue to be popular with exhibitors, but neither is a pleasing shade. Mrs. T. Jones (blue) and Wild Rose (old rose) are each the best in their respective colour. Small growers would do well not to grow bicolors, Picotee-edged and orange varieties to any extent as they are liable to disappoint. The colour of the first two will run if very wet weather is experienced, and the latter require shading to have them in perfection. In keen competition, orange shades are a great help. Tangarine is not very vigorous in growth, but the colour is more pleasing than that of Royal Sovereign and Wizard, two orange varieties much favoured by exhibitors.

Two varieties of merit which I have not grown but have seen under trial, are Magnet and Olympia. The former is very rich in colour, being several shades deeper than Miss California and Queen of Roumania; the latter is a purple sort and sure to become popular and be largely grown next season. *Charles Hodgson, Acton Place Gardens, Sudbury.*

ALPINE GARDEN.

ASTRANTIA MINOR.

THIS modest little plant has a singular charm of its own. It is anything but showy, and belongs to a genus which has few species of much garden merit in the usual sense of the term. Still, there is a refinement and distinction about Astrantia minor which places it amongst the best of its kind, and which should always earn it a place in any garden where out-of-the-way subjects are appreciated.

This alpine woodlander sends above its tuft of finely-cut, deep-green leaves, slender, elegant flower-stems which terminate in quaint, little, pure white flowers, about the size of a field Daisy. The blossoms are yielded nearly all summer through, and the whole plant does not often attain a foot in height. Grown in a cool, rather damp, soil, mixed with leaf-mould to retain moisture, if necessary, and shaded from the hottest sun, A. minor will come up year after year with unfailing vigour.

SCABIOSA GRAMINIFOLIA.

FOR a dry, sunny spot in the rock garden, there is no more delightful Scabious than this species, which is a native of the more southerly Alps. As the specific name implies, the foliage is narrow and grassy, and forms a tuft or mat some three or four inches deep, the pale green of the leaves being silvered with a fine down.

The flowers, standing about eight inches above the leaves, are borne singly on erect stems; they are of large size and of an attractive shade of soft, pale lilac, which blends most harmoniously with the hoary foliage. This is a lime-loving species, and when doing well in congenial conditions, it is a most prolific bloomer, a succession of flowers appearing all through the summer.

S. graminifolia is liable to suffer in winter—more from wet than frost in this district—but a plant growing near the top of a retaining wall in dry, poor soil has proved very permanent. *N. Wales.*

FLOWER GARDEN.

BERKHEYA PURPUREA.

THIS South African Composite, commonly known as Stobes's Aster, is not a particularly handsome plant, but it will always catch the keen eye when in flower by reason of its distinct appearance.

The large, bluish-purple flowers are borne on stiff, angular stems, from two feet to three feet tall. The flower-stems and the wavy margin of the leaves are spiny. The surface of the leaf is covered with dense, soft hairs.

The plant forms a clump of spreading tufts of foliage and may be increased by detaching the underground stems in spring. *F. W. Jeffery.*

GREEN HERBAGE FOR SUN-BAKED BANKS.

THE appearance of otherwise well-kept lawns is often spoiled by being partially or otherwise surrounded by sun-baked banks whereon not even grass will succeed. In such cases the condition of the soil is obviously at fault and watering is of no avail. Often the herbage turns quite brown and unsightly by mid-July or August. For covering these banks and so doing away with their unsightly appearance, three plants have been found eminently suitable. One is Achillea Millefolium (the common Yarrow). Another is Anthemis nobilis (Chamomile). The third is a weed, sometimes known as Spergula or Pearlwort, the proper botanical name of which is Sagina procumbens.

Seeds of all three may be purchased. The prices are, roughly, for Achillea millifolium, 1s. per ounce; for Anthemis nobilis, 7s. per ounce; and for Sagina procumbens, 21s. per ounce.

Seeds of Sagina should be sown in March while those of Achillea and Anthemis are best sown in April.

Another good plant, or rather, a good shrub for covering such unsightly banks, is Spartium junceum (Spanish Broom), provided the bank lends itself to such adornment. It thrives well in such soil as is described above, and its profusion of yellow, Pea-shaped blossoms is a welcome sight during the flowering season, from June to September. *Capt. E. A. Saunders.*

ORCHID NOTES AND GLEANINGS.

BARTHOLINA PECTINATA (R. BR.)

THE genus to which this quaint but at the same time very beautiful terrestrial Orchid belongs comprises but one other species (B. Ethelae), if B. Lindleyana is considered an eastern form of B. pectinata, which it in all probability is. The subject of our illustration (Fig. 80) is a native of Cape Colony, and is confined to the south-western portion of that country, being native in the Cape, Caledon, Paarl, Worcester and Tulbagh Divisions, from a few feet above sea-level to between 3,000 and 4,000 feet in Du Toits Kloof, and on the Cedar Bergen. It grows in a variety of situations, usually in sandy soil in fairly moist spots, at times amidst short grass on mountain slopes and in the clefts of rocks and is exposed to 10° or 15° of frost when at rest in its native habitat, where it blossoms in September and October.

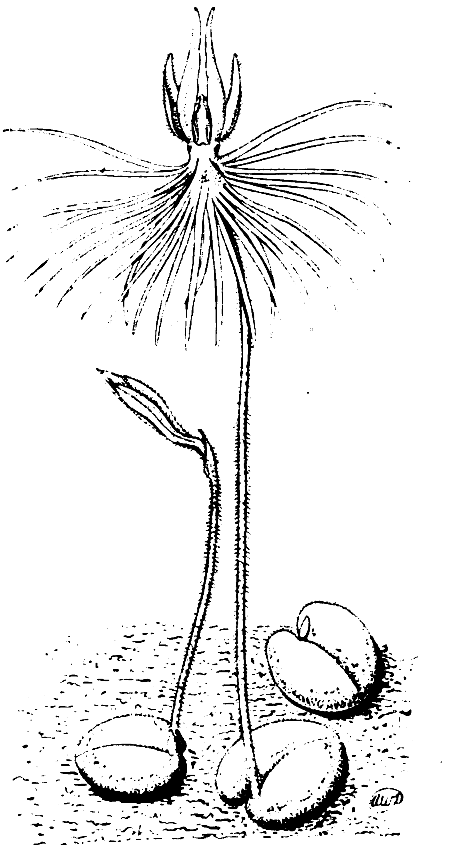

FIG. 80.—BARTHOLINA PECTINATA.

The root system is very meagre, consisting of two small tubers, oval in shape, about the size of hazel-nuts, on the end of short, stout, waxy-white underground stems from which the solitary leaf springs. One tuber is smaller than its fellow when the blossom is in perfection; the larger tuber, which supplies the nourishment required to perfect the flower and seeds, shrivels as the capsule ripens, while the smaller tuber persists and increases in size as the plant goes to rest, and if vigorous enough, sends up a solitary leaf and blossom the following season, but frequently lies dormant for two or more years like the tubers of many other terrestrial Orchids.

The leaf is rounded, heart-shaped at its base and clasps the stem. It is usually slightly convex, smooth on its surface, ciliate on its edges, varying in length from half- to one inch, and about the same measurements across. It is of a deep, rich shining green and is borne horizontally, usually in contact with the soil.

The slender, hairy, purple-tinted flower stem rises to a height of from two to nine inches, supporting a solitary blossom of a size out of all proportion to the tiny leaf. The sepals are narrowly lance-shaped, curving upwards for about two-thirds of their length; in colour they are pale green. The petals are also narrowly lance-shaped, tapering to a point, and rise at the back of the blossom between the sepals which they over-top; they are of a grey-blue colour varying in intensity in different specimens. The lip is shortly three-lobed; the lobes are very deeply cut into numerous, very narrow, ribbon-like, pointed segments, spread out fan-wise, giving the blossom a diameter of over two inches in strong specimens; there is a small conical spur at its base beneath, which contains nectar. The ground colour of the lip is pale purple or lilac, with a pale yellow base sprinkled with a few tiny purple spots.

B. Lindleyana (Reichb. f.) differs from the foregoing species in having smaller and more deeply-coloured flowers, and is also more dwarf, which is probably occasioned by the dry situation which it inhabits. It is native in the southern and eastern parts of Cape Colony, being found in the Uniondale, Uitenhage, Port Elizabeth and Albany Divisions of that country. It grows in poor, sandy soil at a low elevation.

B. Ethelae (Bolus) differs from B. pectinata in having the tips of the segments of the lip thickened into a tiny, club-shaped process. The solitary flower is lilac-blue with bright green sepals. The flower stem is at times over a foot in height, and the solitary leaf at its base usually begins to wither as the blossom opens. It grows in sandy places, often in the shade of shrubs in the south-western portion of Cape Colony, being found in the Cape, Tulbagh, Caledon and Knysna Divisions, ascending the mountains to an elevation of one thousand feet.

The Bartholinas should be grown in shallow pans in a compost composed of fibrous loam, leaf-soil and sand, in a frame or cool greenhouse, where they may have abundance of light and air, for they are nearly hardy in the milder parts of the kingdom. *A. W. D.*

NEW HYBRID ORCHIDS.

(*Continued from July* 17, *p.* 47).

Name.	Parentage.	Exhibitor.
Brasso-Laelio-Cattleya Janet ...	B.-L.-C. Adonis × C. Mossiae	Charlesworth & Co.
Cattleya Brightness	Brilliant × Warscewiczii	Sanders.
Laelio-Cattleya Canicula	L.-C. Sirius × L.-C. luminosa	Mrs. Bruce & Miss Wrigley
Laelio-Cattleya Pavonia	C. Schroderae × L.-C. amabilis	Charlesworth & Co.
Laelio-Cattleya Pyrope	L. Pacavia × L.-C. Sirius	Mrs. Bruce & Miss Wrigley.
Odontioda Esme	Oda. Manora × Oda. Red Cross	Charlesworth & Co.
Odontoglossum Dolores	Gorizia × Princess Yolande	Charlesworth & Co.
Odontoglossum Emmottae ...	crispum Angela × Gatton Emperor	Sir J. Colman, Bt.
Odontoglossum Mamie	Felicity × Crethus	Charlesworth & Co.
Oncidioda Bruceae	Oncidium Wentworthianum × C. Noezliana	Mrs. Bruce & Miss Wrigley.
Sobralia Edina	xantholeuca × Holfordii	Edinburgh Botanic Gardens.
Sobralia Inverleith	Lowii × xantholeuca	Edinburgh Botanic Gardens.
Sophro-Laelio-Cattleya Prudence	S.-L. laeta × C. Fabia	Sir Geo. Holford.

NOTES FROM A WELSH GARDEN.

Mutisia decurrens is the most noteworthy plant now (mid-August) in bloom. Growing in poor, gritty soil, the roots being protected in winter and kept cool in summer by overhanging shrubs, it has ascended the latter to a height of about five feet. The flowers are borne singly on rigid stalks about eight inches long; they are about five inches across, the brilliant orange ray florets radiating from a central disc that changes from yellow to maroon. This plant has not yet ripened seeds here, but it probably would if against a wall, nor has it thrown out suckers by which it may also be propagated.

Another Chilean climber introduced by the same collector (Richard Pearse) as the above, only two or three years later (1862) is Berberidopsis corallina. This is doing exceptionally well against the angle of a north and west wall, and the upper branches are bearing a fine crop of pendant blossoms in large clusters. These blooms, together with their long, slender stalks, are a glossy blood-crimson, a colour which is a very effective accompaniment to the cool emerald-green of the leathery leaves. Individually, the flowers are globular, half-inch across, and composed of a number of incurved, fleshy segments, the outer ones shorter and more spreading than the inner.

Eucryphia pinnatifolia has also been in bloom since early August, but its congener, E. cordifolia, which is evergreen, was cut back at the tips by last winter's frost. Desfontainea spinosa, both in the woodland and more open places, is a gorgeous spectacle with its numerous waxen trumpets of crimson and yellow, and Solanum crispum var. autumnale, which has been flowering nearly all the summer, is now arriving at its best stage of blooming, the later flowers usually being larger, more numerous and a clearer blue than those of earlier months.

It would be difficult to over-estimate the value of these Chilean subjects in our westerly counties. In addition to those mentioned, there are many others of exceptional merit. They all appreciate our humid climate and moderate winters, and from the days when Berberis Darwinii is aflame with those wonderful masses of bloom which have no rival in the genus, to the later autumn, when Tropaeolum speciosum is still weaving its ropes of scarlet over the sombre evergreens, the garden is never without some striking object to remind us of how much we owe to the Chilean flora.

Among the Heaths now in bloom, Erica vagans var. Lyonesse and E. v. D. F. Maxwell stand out as remarkably fine additions to a species which, if we except St. Keverne, was rather lacking in varieties of distinction before the appearance of these novelties. The former is a pure white variety with very large inflorescences and dark green foliage, whilst the other might rival St. Keverne, but it is of quite a different tint, the very large flowers being a particularly soft cerise with a good depth of tone and no trace of the offending blue.

For providing a bold mass of colour from midsummer onwards, I do not think there is any Heath of its size much better, all points considered, than a good form of E. cinerea, such as rosea or the new variety, Frances. But among dwarfer forms of these species the six-inch tall coccinea is without a peer.

E. ciliaris was injured by frost last winter for the first time in this garden, but it made a rapid recovery and came into flower earlier than usual. I find this beautiful species to be one of the most suitable subjects for growing as a carpeting plant in association with hybrid Azaleas.

In a cool place, along with some kindred subjects, Schizocodon soldanelloides has borne several heads of flowers. The deeply-fringed bell-shaped blossoms in a particularly clear shade of rose, with markings of a darker tone within, are inexpressibly lovely, and daintier perhaps even than those of the Shortias.

Not far from these, Gentiana asclepiadea in several forms is opening its first flowers. G. Purdomii is still adorning its trailing stems with sapphire trumpets as it was six weeks ago; G. Freyniana is a mass of dark, yet clear blue; this species (or variety) runs its near allies G. septemfida and G. lagodechiana, very close in prolificacy, colour and ease of culture. G. Farreri and G. sino-ornata opened the first of their incomparable blossoms at the end of July. This is much earlier than usual here and not always a favourable sign, more especially with the former, for premature blooming generally indicates a cessation of growth, and that curious yellowing of the foliage, for which it is often difficult to assign a reason.

There is no prettier group among the smaller plants of the waterside at this or any other season than that composed of Gentiana Pneumonanthe, a dwarf form of the Grass of Parnassus, the Ivy-leaved Campanula (Wahlenbergia hederacea) and the Bog Pimpernel (Anagallis tenella)—all of them, of course, being natives. The colours of these are very harmonious, and the plants are in the happiest accord.

Mimulus Lewisii alba, which has large, snow-white flowers and downy, emerald foliage, is a new-comer which promises to be a great acquisition. I hope some day to see a goodly patch of it alongside the glowing crimson-scarlet of M. cupreus, Whitecroft Scarlet, or the even more fiery hybrid, M. Burnettii. Last winter left a good many vacancies among these Mimuluses, some—like nearly all the Lobelias of the cardinalis and syphilitica set—having completely disappeared. M. cardinalis on the contrary, is quite permanent in wet ground.

The Cypellas are always attractive in the border at this season. C. Herbertii has an extremely long flowering season, commencing in later June and carrying-on into autumn. C. plumbea (platensis) is always rather later in coming into bloom, but it is singularly attractive, each of the three segments bearing a blotch of pale blue which makes a very telling combination with the golden-buff of the rest of the flower. These Cypellas appear to be perfectly hardy in free soil; here they have been left undisturbed for years. Bidens dahlioides is flowering well under similar conditions, and another border plant which always attracts admiration is Potentilla Hopwoodiana, whose large and abundant blooms are a soft salmon-rose.

Having had its flowering stems of earlier days removed, Lindelofia spectabilis has developed another crop, and these are laden with sapphire bells which rival the blue of Cynoglossum Wallichii. With the latter, the large, pure white inflorescences of Spiraea filipendula fl. pl. are very effective and another plant that goes well with this native Spiraea is the clear lavender-blue variety of Tradescantia virginica. In much the same tint Aster Thomsonii and its dwarf form, A. T. nana, are singularly pleasing and prolific, whilst, for a cool soil, the three-feet tall A. pyrenaeus, a Catalonian species with stout and erect leafy stems, downy foliage and large flowers in a fresh blue-purple, is well worthy a place among plants which flower from August to September. *A. T. Johnson, Ro Wen, Conway.*

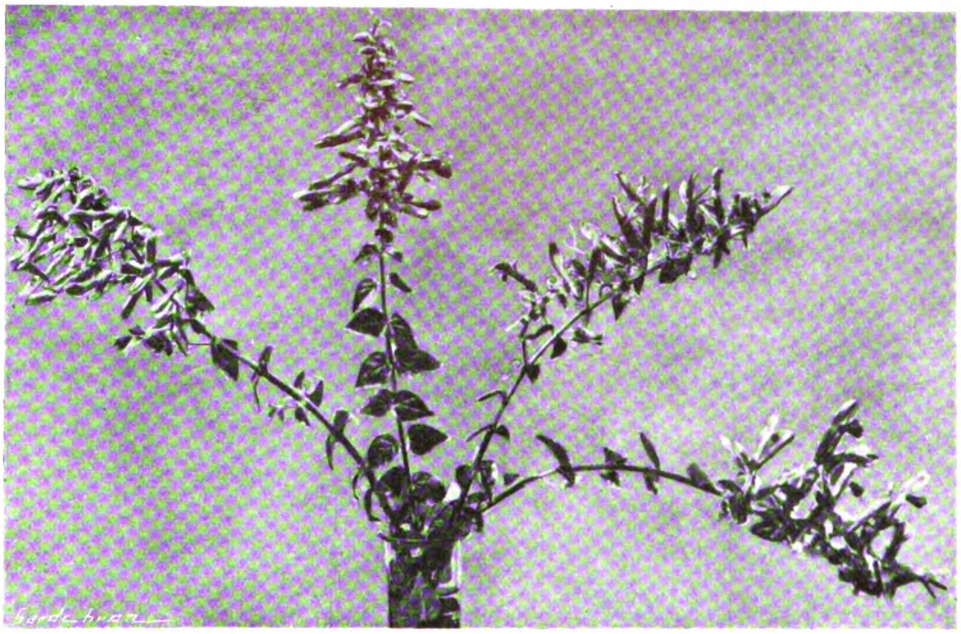

FIG. 81.—PENTSTEMON CORDIFOLIUS.

NOTES FROM GLASNEVIN.

PENTSTEMON CORDIFOLIUS.

The truly shrubby species constitutes but a small section of the genus Pentstemon, and P. cordifolius is easily the best of them. Although not absolutely hardy, P. cordifolius grows well against a sunny wall, where it may be trained up to at least six feet or eight feet. When in flower in July and August it is very striking. The woody stems bear shortly-stalked, heart-shaped leaves, dark green and smooth on both surfaces and coarsely toothed. The flowers are produced in clusters from the axils of the leaves at the ends of the shoots (Fig. 81), and continue to appear in succession as the shoots lengthen. The corolla is rich scarlet and is covered with a short, rather inconspicuous pubescence. The figure in the *Bot. Mag.*, t. 4497, scarcely does the plant justice, as the flowers are certainly closer and more numerous than represented there. Propagation is easy by means of seeds or cuttings.

CHEIRANTHUS SCABER.

This, following the *Index Kewensis*, is the correct name of Dichroanthus scoparius, a member of the Cruciferae and native of the

Canary Isles. Seeds of the variety D. scoparius Lindleyi were presented to Glasnevin by Dr. Praeger and germinated freely. The resultant plants flowered the year after sowing and appear to be perennial. Of a sub-shrubby nature, the plants are now a foot to fifteen inches high, but as they were first grown in pots, it is possible that they were somewhat "drawn,"; earlier planting would doubtless result in dwarfer specimens. The leaves, clustered towards the ends of the shoots, are oblanceolate, one to two-and-a-quarter inches long, at first furnished with short, stiff hairs on both surfaces, but ultimately glabrous. The flowers are produced in racemes and almost identical in colour with those of Erysimum linifolium but they are twice as large. Plants put out on the rock garden in early summer have grown well, but it remains to be seen whether they will survive an ordinary winter of alternate frost and rain, such as we usually experience here.

ANDRYALA AGARDHII.

This native of Spain is a rather pretty member of the Compositae for a sunny position in the rock garden. The leaves are mostly radical, linear-spathulate, and the whole plant is covered with a short white tomentum. The solitary flower heads are yellow, produced just above the leaves, the total height of the plant when in flower scarcely exceeding six inches. Although the flowers are not striking, the unusual whiteness of the tomentum renders the plant conspicuous and at the same time demonstrates the need for a sunny, well-drained pocket or crevice.

CORYDALIS VESICARIA.

Seeds of this South African annual were received from a correspondent at the Cape under the name of "Balloon Climber." The resulting plants had all the appearance of a common Fumaria, and they have borne the name of F. vesicaria. So weedy-looking were they, with their finely-divided leaves and tiny, pink and white flowers, that only one or two were kept. These, however, have proved interesting since developing the much inflated seed vessels (Fig. 79) — hence the name Balloon Climber. As they ripen they become hard and split into two halves which are fibrous within. Seeds are freely produced. According to the *Index kewensis*, the correct name is now Corydalis vesicaria, though the fruit is unlike that of any Corydalis I am acquainted with in cultivation. Harvey, in *Flora capensis*, vol. I, p. 16, describes it as Cysticapnos africana, separating it from Corydalis by the bladdery capsule.

PLATYCODON GRANDIFLORUM.

This is one of the handsomest of August-flowering plants for the border or rock garden. Growing some fifteen inches high, it is, quite apart from botanical characters, distinct in habit and appearance from other members of the Campanula family. Without examination, the habit and appearance of Adenophora, for instance, frequently confuse that genus with Campanula, but the large, spreading corolla, glaucous leaves and thick root of Platycodon are sufficiently remarkable to distinguish it from all others. What may be considered the type has deep blue flowers produced from the axils of the upper leaves, while another form, similar in habit and dimensions, has flowers of milky blue, while a third less common variety has pure white flowers.

The dwarf P. grandiflorum Mariesii, growing only about a foot high, I have not seen for years, but it is a first-rate rock plant. Double forms of the white and blue plants have been listed from time to time, but I am not acquainted with them and doubt if they could improve on the single flowers. Platycodons are easily raised from seeds, and no doubt new forms could be raised by selection and careful cross pollenation. A deep rich soil in a sunny open part of the rock garden suits them well. In the generally moister conditions of the herbaceous border they will grow to a greater height, but the roots frequently perish in winter.

LILIUM DUCHARTREI.

This beautiful Lily is figured in the *Botanical Magazine*, t. 8072, and is fully described, with a list of its synonyms in *The Lilies of Eastern Asia*, by Mr. E. H. Wilson.

Our original bulb came from the Royal Botanic Gardens, Edinburgh, and was grown in a pot for the first year. Thereafter it was planted among Rhododendrons in a bed made of mountain loam and peat kept above the level of the natural soil to escape lime. There it has steadily improved, and this year several stems bearing eight to twelve flowers have been produced. The stems are lightly shaded by Rhododendrons and no direct sun reaches the Lily from above owing to the position of a tall Pinus insignis, though the Lily is not directly under the Pine. The stems are three feet high, well-furnished with scattered lanceolate leaves, and the flowers are beautifully stained and spotted with purple.

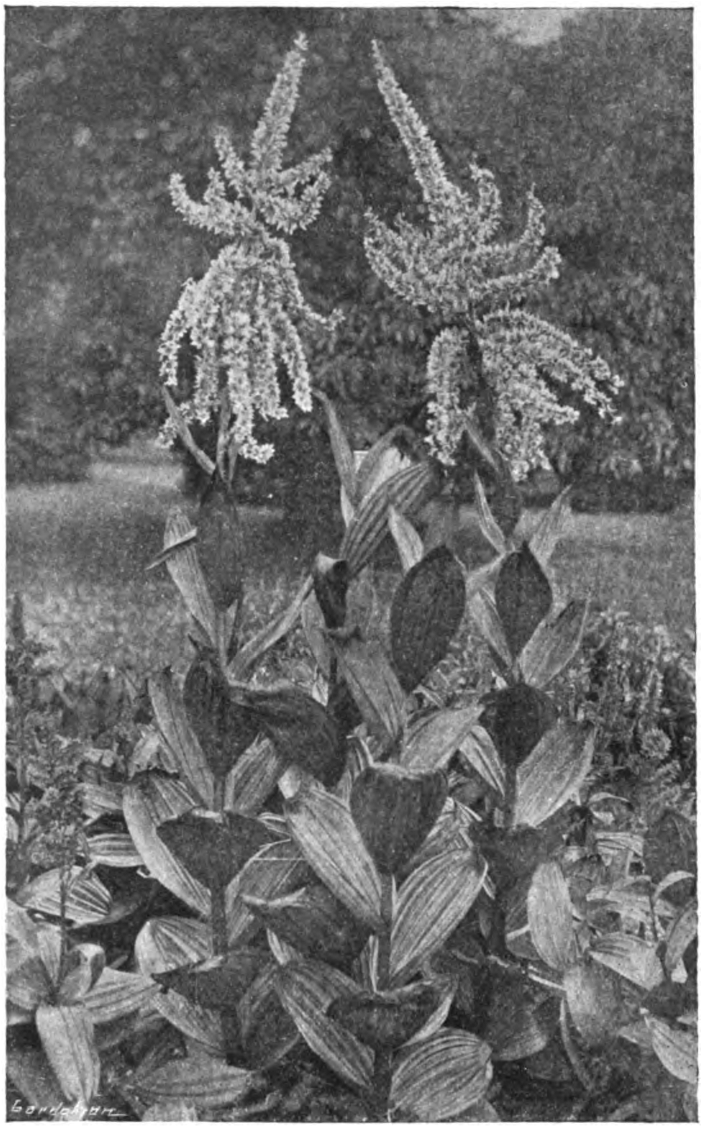

FIG. 82.—VERATRUM CALIFORNICUM.

VERATRUM CALIFORNICUM.

The well-known Veratrum nigrum has long been grown in gardens as much for its handsome, strongly nerved leaves as for its dark chocolate brown flowers. Several other species are well-known in botanic gardens and are worth growing by those who care for hardy plants with fine foliage. They are mostly tall, herbaceous plants, reaching a height of five feet to six feet in good, deep soil. Among them the subject of this note (Fig. 82) can be recommended. The stem, which is furnished with large alternate sessile leaves, is terminated by a large panicle of white flowers with green centres. These remain in good condition for a considerable time, and a well-established specimen stands out conspicuously among other herbaceous plants.

Other good species are the European V. album, with white flowers, and the Indian Poke, V. viride, with green flowers. V. Wilsonii seems to be little-known and differs considerably from the European and American species. The stem is somewhat three-angled, three feet or thereabout in height, the leaves lanceolate, those at the base fifteen inches long and one inch wide, tapering to a sharp point. The inflorescence is paniculate, the lateral racemes shorter than in the other species, flowers white with a green band about the middle of each segment. V. Wilsonii first came to Glasnevin from Messrs. James Veitch and Sons, in 1914, and is presumably one of Mr. Wilson's introductions, although I have failed to find it recorded in the Kew *Hand List of Herbaceous Plants* or the latest supplement to the *Index kewensis*. *J. W. Besant.*

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MR. F. KINGDON WARD'S NINTH EXPEDITION IN ASIA.

II.—INTO THE HILLS.

I SUSPECT there is really very little difference between the procedure laid down for a week's plant hunting in, say, the Scottish Highlands and on the Irrawaddy-Brahmaputra divide. It is when one comes to compare them over a period of months that the essential difference between the two problems discloses itself. In other words, it is the preliminary staff work, rather than the actual collecting which is the snag; overcome that, and the rest is simple. The real problem is to transport oneself and party a distance of four hundred miles from an advanced base in a sound state of health, *mente manuque*, and to keep the whole outfit there for six or eight months, fit, and if possible cheerful; but at any rate, fit; the cheerfulness follows.

Food is the great nightmare, and arising out of that, as they say, transport. There is no food in the jungle, and hence no transport either. All food has to be taken with us, which, of course, enormously increases the transport. A village must be found, if possible, not lower than 6,000 feet, both as base and as a depôt for at least a few coolies; and in the village must be found a watertight hut which one can use for the season; after that comes the reconnaissance for camping sites at 10,000 feet or thereabouts. When all these things have been satisfactorily disposed of, one can set to work collecting; and during the progress of these preliminaries one will generally have succeeded in making a rapid survey of the local flora, and even in collecting a few specimens.

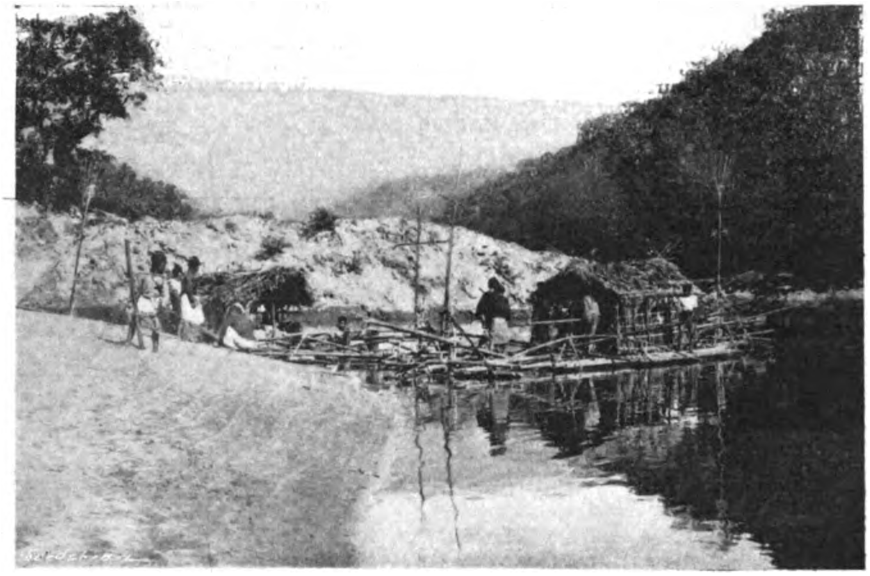

FIG. 84.—RAFT ON THE MALI KHA.

I left Rangoon by the midday Mandalay mail on March 19, and after the usual long, hot journey, reached Myitkyina on the evening of the 21st; my stores, however, arrived several days later. Myitkyina, with its well-shaded red roads, its spacious evergreen *maidan*, and the broad Irrawaddy drowsing forty feet below the top of its banks, but already beginning to mutter in its sleep, is one of the prettiest spots in Burma. On three sides the blue mountains hem it in, curving down in two long horns which point to the south; on the China frontier, forty miles away, they rise to a considerable height, but northwards, where the river breaks up into a network of streams, they are lower as yet.

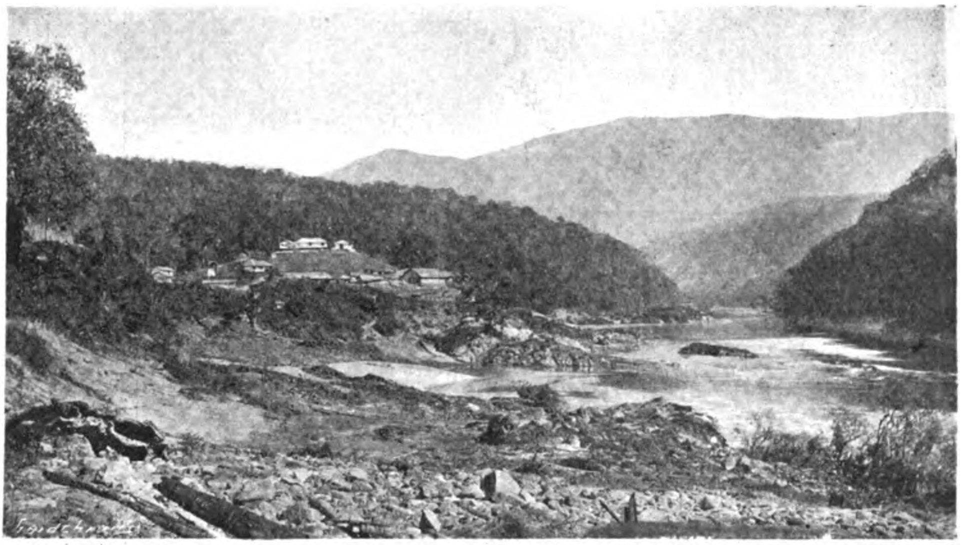

FIG. 83.—NSOP POST, ON THE MALI KHA, FORTY MILES FROM MYITKYINA ON THE ROAD TO FORT HERTZ.

A week passed before my mules were ready for me at Nsop (Fig. 83), forty miles up the road; but in the evening of March 28, four bullock carts were loaded with my kit, and at ten o'clock, when the full moon rose, they started north; carts always travel by night in the hot weather.

I remained in Myitkyina till the 30th and then started on a bicycle to ride the first thirty-two miles to the point of assembly, where I was to join the carts and go on with them to Nsop next day a sufficiently prosaic way of embarking on the journey. Riding across the flat, covered with scrub jungle, I soon reached the Irrawaddy confluence, and in the evening found myself by the Mali Kha (Fig. 84), where the carts had unloaded. Next day we reached Nsop, and here my kit was transferred to Chinese mules for the 170-mile journey to Fort Hertz.

The river was still quite low, though visibly rising due to the snow melting up in the north. On the rocks in the river bed were white Dog Roses—a species common in Upper Burma, even south of Myitkyina—and flaming sheets of Rhododendron indicum, vivid against the dusty green. I sent home seed of this latter in 1922. It will not, of course, be hardy, for Nsop is only 500 feet above sea-level, in latitude 25° 30′, and knows no frost—though, as a matter of fact, my 1922 plant came from a good deal further north and higher up; nevertheless, in the breeder's hands the species might be worth its salt, for outside the Azalea garden, I have never seen a form of R. indicum with flowers so large and of such an intense carmine colour.

There are several interesting plants in the river bed, and they fall into two classes—those which are not submerged in the rainy season and those which are, partially or completely. Amongst the former are the two shrubs already referred to, and a Willow, confined to the rocks. The latter are either annuals, such as a small Ranunculus, or amphibious, like certain species of Polygonum, or occasionally shrubs, amongst the last-named being a dwarf Willow, found growing only where the soil was muddy.

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* The previous article of Mr. Kingdon Ward's Ninth Expedition in Asia was published in our issue of August 14, 1926.

The forest was still predominantly green, though parched-looking, for the hot weather was only just beginning. By May, a good many of the trees would lose their leaves for a month or six weeks before the rains broke, and flower. At present there were very few flowers. Bauhinia variegata—leafless—was in bloom, and a Sophora (I think) with violet flowers; on the banks are Begonias, Strobilanthes, Chirita, Torenia, Lobelia, and a few Acanthaceae and Compositae.

Above Nsop the road soon leaves the Mali and ascends into the hills, never rising above 2,000 feet, however; and the highest point is not reached till we are more than half-way to Fort Hertz. We travelled stage by stage, which means ten or twelve miles a day, as the mules are not fit for much more in the hot weather; twice, however, we did a double march, covering nineteen miles on each occasion. As a rule, what with the heat in the middle of the day, the blood-sucking flies and the extreme monotony of the jungle scenery, one was quite ready to halt at the end of five hours marching.

For the jungle is monotonous in bulk, however diverse in detail. Look which way you will, you see the same shapeless ocean of uniform green, with the curved hills rising and falling till they melt away into the cloudless sky.

But the hill jungle is luxurious and overwhelming, though in spite of the great variety of forms, one does meet with the same species repeated over and over again. Mussaenda is abundant everywhere, easily recognised by its large, creamy-white bracts which serve to draw attention to the more important but far less conspicuous orange flowers; the plant reminds one of those sacred trees one sees in Tibet, hung all over with little paper prayer flags. These bracts, when quite young, are green, and look like any other leaf; but they soon turn white at the tip, and so gradually down to the base, though the veins remain slightly green. Another common tree, and one of the very few leafless ones, is Butea, where scarlet flowers are almost the only bit of live colour in the jungle. There is a terrible lot of Bamboo growth and Rattan, and occasionally one sees an Indiarubber tree (Ficus elastica), or a Sago Palm, or a Fan Palm. The bungalows at each stage are thatched with the leaf of the last-named, and though comfortable enough are full of unpleasant surprises.

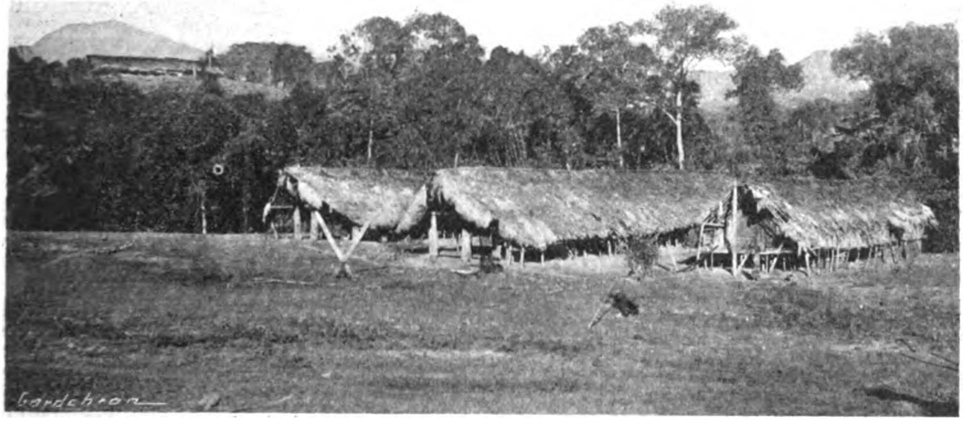

FIG. 85.—KACHIN VILLAGE ON THE ROAD TO FORT HERTZ.

The thatch is full of birds and insects, which keep up a restless rustle, and occasionally oust each other with considerable acerbity; so that caterpillars and beetles sometimes drop heavily on to the table at night, while you are dining, and seek sanctuary in the nearest dish. It is unnerving too, when you move a box after dark, to see a snake slink quietly from behind it, while I have developed a profound sympathy with little Muffet ever since a gross, pubescent spider popped out from under my bath and glared balefully at me before pattering horribly on its way.

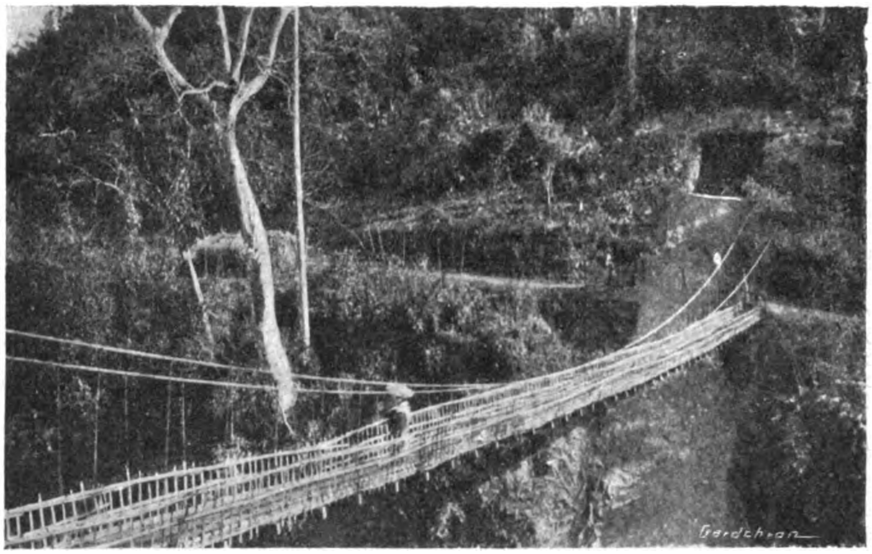

FIG. 86.—GOVERNMENT SUSPENSION MULE BRIDGE ON THE ROAD TO FORT HERTZ.

Further north a species of Oak was common, and flowered in clouds of creamy tassels; while an Englehardtia was putting forth foliage and flowers. Dipterocarpus, Schima and various species of Ficus were common, to judge by the fallen fruits on the road.

By the roadside, where the jungle has been carelessly cut and burnt, grass and Ferns have sprung up, affording some grazing. On the high banks a big Nummularia, with butter-yellow flowers, and a white Spiranthes, were common where the sun smote; and on those banks which were always heavily shaded and moist grew a wealth of Ferns and moss, Lycopodium, Selaginella, Begonia and a violet Chirita, which is like a small Gloxinia.

The country is very sparsely populated. One sees very few villages, and the road passes through fewer. A Kachin village is illustrated in Fig. 85. The Kachins cultivate few fruits or vegetables—a few Limes and inferior Bananas, and during the rainy season one cannot grow anything in the best attended garden.

On April 7 we reached Machega, 123 miles, where the road branches off to Sumpra Bum, the new district headquarters, perched on a hill top, 4,000 feet above sea-level; it is a much healthier spot than Fort Hertz, and the latter has consequently been reduced to the status of an outpost. From Machega, the highest point on the road—for the direct road to Fort Hertz does not pass through Sumpra Bum, an isolated hill to the east overlooking the Mali valley—we could see snow on the range to the west, though the peaks are under 10,000 feet; this range divides the Mali valley from the now famous Hukong valley, where the slaves are being released. After Machega we crossed a series of rivers flowing to the Mali, and descended gradually to the Hkamti Plain. A change came over the weather, too, and we had rain every day, which made the road abominable and stimulated the leeches. During the next few marches one saw little except mud; but I did remark a species of Horse Chestnut in flower—quite a small tree, various trees of the Lime family (one was a species of Elaeocarpus), a small, white-flowered Buddleia, and in swampy thickets of tall grasses, Hedychium, and other herbs tied and tangled together with the climbing Fern, Lygodium, a large Calanthe (Orchidaceae) with yellowish-brown flowers.

At last, on April 13, we reached the Mali Kha once more, and emerged from the hills on to the plain. The river is crossed twice here within a mile, to avoid crossing a dangerous tributary on the right bank. After crossing by the suspension bridge (Fig. 86), we had to recross by a ferry, as the foot bridge had been partly destroyed in a recent spate.

Next day we crossed fourteen miles of deadly dull plain, covered with high grass and scrub jungle, and arrived at Fort Hertz, now almost derelict since its fall from grace; anyhow, it was deserted at the moment, neither the Commandant, the Civil Officer, not the Indian doctor being in the station.

However, the first and least interesting part of the journey was now over, and I began immediately to prepare for the next lap. *F. Kingdon Ward.*

(To be continued.)

THE CONCEPTION OF A SPECIES*.

In the light of recent experiments and researches in Genetics, Cytology and Taxonomy, it is now possible to present a more precise conception of a species.

A species is a group of individuals of common descent with certain constant characters in common which are represented in the nucleus of each cell by constant and characteristic sets of chromosomes.

Since the discovery of Mendel's law, Genetics, with its experimental analyses of hereditary units, has thrown considerable light on the nature of variation in plants and animals. It is now clear that hereditary variations are due to discontinuous mutations in the chromosomes, but it is equally certain that the most minute variations perceptible may be inherited, as demonstrated in the eye-colours of Drosophila, and as I found in the minor flower-shades of the scarlet Antirrhinum. Genetics has provided us with a fairly complete understanding of the nature and inheritance of the minor variations of individuals, varieties and sub-species upon which Darwin rightly laid so much stress, and to which many modern systematists have given specific rank. Concerning the major variations that constitute species and genera in the broad Linnean sense, little light can be expected from Genetics alone owing to the barriers of sterility between the larger groups.

Recently, Cytology, with its modern refinements of technique, has made remarkable progress in the analyses of chromosome complexes. So far as my records go, at least 2,845 species of plants and animals, representing 1,326 genera, 417 families, 181 orders, 77 classes, and 33 phyla have been examined. The chromosome numbers found in these species vary from one pair in the Nematode Worms Gordius and Ascaris to more than one hundred pairs in the Decapod Cambarus, while in plants the numbers range from two pairs in the Fungi Eumycetes to more than one hundred pairs in Equisetum and the Ferns Ophioglossum and Ceratopteris.

In all recent cases where large numbers have been examined by several observers, it has been found that the number of chromosomes or chromosome sets is constant and characteristic for each species. In some genera the chromosome numbers of the species so far examined are identical. In other genera the chromosome numbers are polyploid, being in regular multiples of a basal number; notwithstanding the comparatively few cases where many species of a genus have been examined, fifty-four polyploid genera belonging to seven phyla have been found in plants, while in animals, where much less has been done, twenty-five polyploid genera belonging to ten phyla have been recorded. In other genera the chromosome numbers may be either in two or more polyploid series, or they may be irregular.

It is important, however, to emphasize the fact that visibly identical chromosome complexes may be entirely different in their genetic constitution, they may have similar genes in different combinations and arrangements, or they may have entirely different genes. For this reason, chromosome numbers are only of secondary importance, and Cytology alone cannot be expected to provide a conception of a species. It is only by an intimate combination of the experimental methods of Genetics with the cytological analyses of the chromosome complexes of various species and genera that important results have come.

After the discovery of Mendel's work and its extension to various species of plants and animals by Bateson and others, the most important advance was made by Morgan and his colleagues who have been able experimentally to locate the relative positions of the genes of the Mendelian characters of Drosophila in each of the four chromosomes, and to establish a linkage system of these characters within each chromosome.

This valuable work has now been amply confirmed in many genera of plants and animals, and is being rapidly extended. These experiments by combining cytology with genetics have broken new ground and demonstrated the chromosome mechanism by which the minor variations of a species are inherited.

The next step is to discover the chromosome mechanism which regulates the inheritance and evolution of the major variations that constitute species and genera, and many investigators are now working at this problem. This brings in Taxonomy, the oldest and most important of the biological sciences, for in any conception of species the systematist must have the final word, since it is he who makes use of the results obtained by other biological specialists in order to build up his Classifications, Distributions and Phylogenies.

My own work has been chiefly concerned with an intensive study of the polymorphic and polyploid genus Rosa. The species and sub-species of this genus have been exhaustively analysed taxonomically and 424 individuals of these (representing all the known species) have so far been examined cytologically, which added to the 332 individuals previously examined by Tackholm, Blackburn and Harrison and Penland makes a total of 756 individuals in which the chromosome complexes have been analysed.

A large number of genetic crosses, have been made between the various species, and a number of F1 plants raised, which though sexually sterile, have provided valuable material for taxonomic and cytological analyses. The experimental results of these investigations show :—

(1) That the specific characters of Rosa are represented in sets of seven chromosomes called septets.

(2) That there are five fundamental species of Rosa, each species carrying in its gametes one distinct genetical septet of chromosomes representing at least fifty specific characters.

(3) That the regular polyploid species of Rosa are made up of the various paired combinations of the five differential genetical septets making twenty-six species possible. Eighteen of these have been found and have been tested taxonomically, cytologically and genetically, leaving eight to be discovered, if they exist, one of which has already been made genetically.

(4) That the irregular polyploid species of Rosa, peculiar to Europe and western Asia, are made up of various paired and unpaired combinations of the five differential genetical septets, making 180 species possible, many of which apparently do not exist.

Thus in Rosa, 211 species are possible, each differing from another in the presence or absence of genetical septets of chromosomes and characters. Each species is therefore a discontinuous taxonomic unit subject to experimental verification by three distinct methods, taxonomic, cytological and genetical. Genetically each of these species is homozygous in its specific characters and either homozygous or heterozygous in its sub-specific, varietal and minor characters, while each species is taxonomically equivalent to a Linnean species.

In accordance with this conception, a species is a real entity, corresponding to the intuitions of the old systematists, though they were unable to demonstrate it experimentally.

The utility of such a conception of species in Classification and in the problems of Distribution, Speciation and Phylogeny is evident, for it is clear that the chromosome complex is the vital mechanism of evolution, and there are welcome signs at this meeting that the physiologists and biochemists are coming to our aid in solving the pressing problem of the modes of action of the chromosomes in development. *G. C. Hurst.*

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* Paper read at a joint discussion between Sections C, D, and K, at the British Association, Oxford Meeting, August 10, 1926.

THE QUALITY OF SOILS.

The quality of soils is of the greatest importance to all growers of plants and, although there are very few soils, in this country at least, which are not capable of sustaining plant life, their quality varies in a very high degree. But fertility proper is only a relative term, and is frequently even more dependent on the physical condition of the soil in question than on its actual nutrient material content as demonstrated in the changed natural flora of a waterlogged area after draining.

A study of the wild vegetation of any area is a valuable aid in the determination of the general qualities of soils, for marked differences in the vigour and nature of the plants growing under natural conditions can be found everywhere.

Calluna vulgaris, the common Heath, grows naturally on vast areas of comparatively infertile soil in almost every county of the British Isles. When its growth is long and straggling with scarcely any accompanying vegetation, it indicates a deep, mossy soil, very poor and infertile. If the Heath is close-growing and healthy and accompanied by Lycopodium clavatum, the Club moss; Potentilla erecta (Tormentilla) and some of the common grasses, it denotes a more fertile soil which could readily be improved and made suitable for many garden crops. Vaccinium Myrtillus, the Bilberry, is frequently found growing with the common Heath, Blechmum spicant, the Hard Fern; and the Tormentil and denotes a superior class of soil suitable for the cultivation of many flowering trees and shrubs. Ulex europaea, the common Gorse, is very abundant on waste lands, and in many areas takes possession of the soil to the exclusion of any other vegetation, but in close proximity to it on the better soils will be found Senecio Jacobaea, the Ragwort; Carduus, Thistle; and wild Clover, while on the very poor and undrained soils Empetrum nigrum, the Crowberry and Rumex Acetosella, Sheep's Sorrel; are its companions.

The Gorse, at a casual glance, is not a safe criterion as to the quality and kind of soil, as it will grow almost anywhere; on embankments made up of almost pure sand it is frequently the only vegetation which appears for several years. The quality and size of the wood is, however, a good guide, as it is only on fairly good, loamy soils that the Gorse develops very strong stems and branches, hence by a study of the growth of the Gorse together with its accompanying plants some idea of the relative quality of the soils concerned may be obtained. Generally speaking, however, where Gorse grows freely and strongly most hard-wooded garden subjects would succeed, following a thorough mechanical preparation of the land, whereas when the Gorse is dwarf in habit and the stems slender and thin, gravelly soil is indicated with probably a hard, iron-pan bottom, unfavourable for the growth of any garden crops until it has been worked deeply and manured heavily.

Cytisus scoparius, the common Broom, is invariably found in dry situations, frequently in proximity to Gorse, and always indicates a soil of fair quality. If it is strong and healthy and growing along with Achillea millifolium, Yarrow; Lotus corniculatus, Bird Trefoil; and wild Clover, the soil and subsoil may be considered fairly good and suitable for the growth of most garden plants, the only preparation needed being the trenching and draining of the ground.

Rubus fruticosa, the common Bramble, and Rosa canina, the Dog Rose, indicate a heavier, loamy soil, often inclined to clay, and very suitable for the immediate growth of nearly all garden crops. Rubus Idaeus, the Raspberry, is often found growing on similar soils, where it crops wonderfully well and yields good-sized fruits, but it is also sometimes found on higher, more exposed and poorer soils overlying chalk, when the weight of crop is much less and the fruit smaller.

Myrica Gale, the Bog Myrtle, is common in some districts, often accompanied by Erica Tetralix, the Cross-leaved Heath, but the soil is generally poor, sandy and wet, and can only be rendered suitable for general garden crops by draining and cultivation. The foregoing are the more common native shrubs, but there are some other species of flowering plants, and even Mosses, that are as much to be depended on as indicators of the soil, and sometimes the flowerless plants are equally reliable.

Aspidium Filix-mas, the Male Fern, and Pteris aquilina, the Bracken, are not safe criterions as to the depth of soil, but they always indicate fairly good quality, for neither will grow on a very poor soil. It is invariably good when they are accompanied by Ajuga reptans, the common Bugle, and Prunella vulgaris, Self-heal, which are generally found in low-lying situations or hollows, where an amount of soil has accumulated. The appearance of Digitalis purpureus, Foxglove, on the higher ground indicates a medium soil inclined to be dry, but still favourable for a large number of garden crops. If the common Ferns are mixed with Polypodium vulgare, the Polypody; and Hypericum perforatum, St. John's Wort; with a sprinkling of Heaths, the soil is generally more shallow, but it is always kindly and quickly amenable to cultivation for garden crops.

Juncus squarrosus, the Inland Bent and small sedges (Carix sp.) are frequently found growing amongst short Heaths, and indicate a poor soil with retentive and impervious subsoil, invariably inclined to be wet, and hopeless for general cultivation until they are well-drained and the subsoil broken thoroughly.

Festuca ovina, the Sheep Fescue, and Nardus stricta, the Mat Grass, are often found growing together, and to the casual observer may be taken for the same plant. They form the principal vegetation of some upland districts and denote a dry, thin soil, fairly rich in vegetable matter, but totally unsuitable for deep rooting subjects. Aira caespitosa, the Tufted Hair Grass, is generally found on light, sandy soils, overlying bluish clay or running sand. Such soil is naturally inclined to be wet, but when drained is suitable for a number of garden crops.

Iris Pseuda'coris, the Broad-leaved Flag, is invariably found on low-lying land, and indicates a brown, rich soil largely composed of vegetable matter. The situations are generally moist but when drained very suitable for the cultivation of vegetables. Juncus communis, the common Rush, is less particular as to soil if the situation is moist. The quality of soil is indicated by the habit of this plant; if it is robust it is similar to that on which the Iris is found, and will grow the same kind of crops, but if slender, the soil is poor, composed chiefly of light loam and sand, and will need much more preparation. Rushes afford an unmistakable proof of dampness, and the ground where they are growing should be drained thoroughly before planting garden subjects, when the Rushes will soon disappear.

Arundo Phragmites, the common Reed, indicates a strong soil inclining to clay, and sometimes to moss, but always rich in vegetable matter and generally surcharged with moisture. If thoroughly drained, however, excellent crops of the stronger-growing vegetables may be obtained from such soils.

Spiraea Ulmaria, and Scilla nutans are plants indicating a deep loam or alluvial soil, sometimes with a sandy subsoil inclining to clay, generally damp but not so much as to necessitate much draining. On this class of soil nearly all garden subjects flourish with comparatively little preparation other than deep working. Many of the mosses may be taken as indicative of thin, poor soils, lacking in nutritive content and not sufficiently fertile to grow garden crops satisfactorily until they are well-worked and manured heavily.

It is unnecessary to mention the nutritive natural grasses so common in our meadows and cultivated land as it is well-known that where these grow and luxuriate the soil is a rich loam and ideal for the cultivation of all garden crops. Those enumerated are amongst the more common of our native plants, and are more or less widely distributed over the whole kingdom, hence they may be taken as indicative of the quality of the soil in which they grow in almost any district. *A. P. C.*

JOHN ABERCROMBIE.

The bicentenary of the birth of this celebrated gardener and author occurs this year, for he was born in 1726. He was the son of a market gardener at Prestonpans, near Edinburgh, and inherited the gardening instinct. When twenty-five years old he was employed in the Royal Gardens at Kew and at Leicester House. Later he entered the service of several noblemen, but, getting married, he settled down in business on his own account as a market gardener at Hackney.

By this time he had achieved a considerable reputation. He not only practised gardening for a living, but studied it, and his knowledge of every branch of the subject was as thorough as it was comprehensive and complete.

At this period, books on gardening were not only scarce and expensive, but were fragmentary, and more often than not restricted to one or two phases of gardening.

Abercrombie was asked by Lockyer Davis, a well-known publisher, to write a manual on practical gardening. But he was a gardener, not a writer; and conscious of his educational deficiencies, therefore, he stipulated that if he undertook the task Oliver Goldsmith should be asked to revise the manuscript.

The terms were agreed to and the manuscript submitted to the great writer, but he was an author, not a gardener, and he returned it with the intimation that Abercrombie knew more about the subject than he did, and was therefore best fitted to write about it.

In these circumstances the genesis took place of the handbook, *Every Man His Own Gardener*, which not only revolutionised contemporary gardening literature but provided the model on which for all practical purposes subsequent popular gardening instruction books have been based.

For the first time, detailed instructions were given to the amateur gardener; he was informed exactly what work to do and when to do it; methods of propagating and raising different sorts of plants, flowers, etc., were described and directions were given respecting the choice of soil and situation for plants of special kinds.

The work achieved instant popularity, and Abercrombie was encouraged to produce other manuals. He wrote a systematic work on general horticulture, under the title of *The Practical Gardener: The Gardeners' Pocket Journal and Daily Assistant*, which in sixty years passed through thirty-five editions, and several treatises of acknowledged value.

His literary labours seem to have brought him very inadequate regard. In the later years of his life he had a hard struggle to maintain himself, but his uprightness and cheerfulness had won him many staunch friends, and they justified their friendship by their ready and ungrudging assistance in times of difficulty.

Abercrombie, who died in the spring of 1806, at a ripe old age, has been described as "The great teacher of gardening." He fully deserved the title. In the impulse he gave to the utilitarian art of gardening he stood in the natural order of succession to the great earliest kitchen gardener, Richard Gardiner, of "Shrewsberie," of whose benefactions in the growing of Parsnips and Carrots it was written:—

> The poore, which late were like to pine
> And could not buy them breade,
> In greatest time of penury
> Were by his labours fed;
> And that in reasonable rate
> When corne and coine was scant,
> With Parsnip and with Carrot rootes
> He did supply their want.
> The rich, likewise, and better sorte
> His labours could not misse,
> Which makes them many times to thinke
> That Salop London is."

T. B. Fowler.

REMARKS ON THE CONDITION OF THE FRUIT CROPS.

(See Tables and Summaries, Ante, pp. 111-117.)

(*Continued from p. 155.*)

ENGLAND, E.

Essex.—The promise of bountiful fruit crops for 1926 was as good as I have ever known. There was a wealth of bloom to warrant the hopes I had for an exceptional year. Plums, Damsons and Pears set their fruits before the devastating winds and frosts came, which caught the Apple blossoms just as they were passing. Apricots on the walls also carried a good crop. Apples are a complete failure. Of the bush fruits, Gooseberries have borne a good average crop. Currants, both Black and Red, which promised well, were ruined by an exceptional attack of aphis as well as by frosts. Strawberries were a very small crop and the plants themselves failed to develop for some reason difficult to understand. Our soil is heavy clay. *Arthur Bullock, Copped Hall Gardens, Epping.*

——The fruit crops in this district are, on the average, very good. Pears are plentiful and good, also Peaches and Nectarines. Nuts are well above the average and of good quality. Small fruits were poor and Apples are scarce, but what few there are are good. The soil is rather heavy, consisting of clay and chalk, and a dry season here is much better than a wet one. The heavy rains of May and early June were not beneficial to crops. *W. T. Kranklin, Little Laver Hall Gardens, Harlow.*

——Owing to the abnormal season crops have suffered severely from blight and heavy rains, though every precaution was taken early in the season to ensure a good crop. Weather conditions have made things hopeless and fruits are late. With reference to the soil, under normal conditions we can grow anything in this district. *John King, High Beech, Loughton.*

——All crops suffered from the cold of early May. Cherries and Apples have particularly small crops; a few varieties of Plums are good. Gooseberries were a heavy crop amongst bush fruits. Our soil is heavy, generally. *C. Wakely, Chelmsford.*

Huntingdonshire.—All kinds of fruit trees blossomed profusely with the exception of Apples which are a failure in this district, but I believe much of the blossom was ruined by a torrential rain in an exceptionally severe thunderstorm on Easter Day, when from 3 p.m. to 6 p.m. we registered two-and-a-quarter inches of rain. All Currants suffered badly from aphis, and Raspberries were a light crop. Strawberries have never been better for dessert. Plum trees carry very heavy crops in some gardens and very light ones in others, and after careful enquiries, I learn that the light crops were due to the storm mentioned. *Guy S. Aubertin, Conington Castle Gardens, Peterborough.*

Lincolnshire.—We had 5° of frost on May 6, when the Apple blossom suffered a great deal as Apple trees were a picture just then as also were the Cherry trees. We are on ironstone, therefore a good rain is very beneficial about every fortnight as the soil is sandy. One could not wish for better crops of small fruits than we have had. *A. E. Jackson, Normanby Park Gardens, Scunthorpe.*

Norfolk.—All fruit trees and bushes blossomed splendidly, but prospects were ruined through frost and wet. The blooms which escaped the former were nearly ruined on June 17 by a severe hailstorm at mid-day, lasting nearly ninety minutes, in which time 0·91 inch of rain was registered, while the temperature fell to 50°. All fruits look unhappy. *A. J. Jones, Gunton Park Gardens, Norwich.*

——Black Currants were the worst of the small fruit crops, only one bush in ten carrying a crop. Aphides did more harm to small fruits than cold winds. Red and White Currants and Gooseberries were good. Apples and Pears did not set well owing chiefly to dry, cold winds. Our best cropping Pears are Doyenne du Comice, Williams's Bon Chrêtien, Duchessé d'Angoulême, Beurré Diel and Conference. The soil is very light over sand and gravel. *G. Barrell, Merton Hall Gardens, Walton.*

——The prospect of a good fruit year was spoiled by heavy hailstorms when the trees were in bloom. Apple trees carried an abundance of blossom, but this was all swept off before it had time to set. Our soil is very light, overlying chalk. *John Dewhurst, Quickenham Hall Gardens, Norwich.*

——All fruit trees flowered well, but only Pears and Plums carry satisfactory crops. The weather during March was good for these fruits. April and May were very cold months, wet and sunless, with hailstorms and many night frosts, all of which was very trying for Apples and small fruits. The only Apples carrying fair crops are: (Dessert) King of the Pippins, Norwich Pippin, James Grieve and Worcester Pearmain; (Culinary) Peasgood's Nonsuch, Lord Derby, Annie Elizabeth and Newton Wonder. Ours is a very light and sandy soil. *Isaiah Johnson, Catton House Gardens, Norwich.*

Suffolk.—The soil in these gardens is light over heavy loam, but around this district there is a good depth of finer loam. We are situated 250 feet above sea-level. Apples promised a heavy crop but the weather was unfavourable, as we experienced heavy hailstorms, cold east winds and night frosts during their flowering period. Cox's Orange Pippin seems to have fared the worst, as the foliage looked burnt up, but the trees are growing better now and the fruit that remains looks well. Late Apples seem to have fared the best generally, but I have never seen Lane's Prince Albert carrying such a light crop. We generally look upon this as a most reliable cropper. Pears here are very good, some having to be thinned. Peaches and Nectarines are good, but Apricots bad. Black Currants gave good, clean crops and as early as last year. Red Currants were a light crop but good. Gooseberries were good and plentiful. Raspberries yielded well but needed more sun as the fruits had not a good flavour. Strawberries were a heavy crop but suffered from lack of sunshine; Royal Sovereign was three weeks later than last year. I commenced picking on June 24 and followed with Givon's Late Prolific on June 29; the latter seemed to have withstood the condition of this season better than most sorts, as its smaller amount of foliage allowed the sun and air to reach the fruit. The Plum crop is rather disappointing. Bullace trees are carrying a very heavy crop. Cherries flowered well and they looked promising, but the cold nights and keen winds spoiled the crop when the fruits were stoning. Figs are good but making more wood than usual. Cob Nuts are promising, but not such a good crop as last year. Filberts are a very light crop. *S. J. Robins, Auberies Gardens, Sudbury.*

——Apples are a very uneven crop in this district, many trees having failed altogether. Beauty of Bath has a satisfactory crop and The Queen and Tower of Glamis are fruiting well. We have a heavy crop of Pears. Morello Cherries have cropped well. Strawberries were a partial failure as the earlier and best fruits rotted, owing to the excess of rain and low temperature. *A. E. Sales, Flixton Hall Gardens, Bungay.*

——The disappointing feature of this year's fruit crop is the almost general failure of Apples to set, notwithstanding an abundant display of blossom, the wet, sunless days of May being probably the cause of the failure. Amongst bush fruits a serious damage was done to the Black Currant crop by aphis attack, many bushes being quite leafless. Gooseberries were abundant and of large size, Strawberries, although promising a heavy crop, were spoiled by the heavy rainfall of June. *E. G. Creek, County Horticultural Instructor, Abbey Ruins House, Bury St. Edmunds.*

MIDLAND COUNTIES.

Bedfordshire.—Apples are very scarce this year, notwithstanding a wonderful show of blossom, but the weather was very bad whilst the general varieties of Apples were in bloom, with rain nearly every day, so it was impossible for bees to work. The early Apples Beauty of Bath, Lady Sudeley, Irish Peach and Worcester Pearmain were favoured with good weather, and these varieties are the only ones that have fair crops. Pears were in bloom during the favourable weather and all varieties have splendid crops. Plums also set freely, and all varieties are very promising, especially Kirke's, Victoria and Coe's Golden Drop. Owing to cold storms, aphis was very troublesome to Plum trees. Cherries and Figs are very poor crops; the severe weather killed a lot of the Fig shoots, but the trees are making splendid growth now. Gooseberries and Raspberries were splendid crops, and the fruits of very fine quality. Red Currants were also plentiful, but Black Currants, although they set well, were very badly blighted and scarcely fit for use. Strawberries set a very fine crop, but a large number of the berries of The Duke and Royal Sovereign rotted owing to excessive wet. The Admiral set splendid crops and scarcely a bad berry was to be found. Laxton's Latest promises well. *W. G. Warner, Chicksands Priory, Shefford.*

——This is one of the most disappointing fruit seasons of recent years for everyone was expecting a bumper yield of fruit. Around here the fruit blossom was most bountiful, but not so the crops. Of the small fruits, Gooseberries were the best and Black Currants the worst. In some places Plum trees in the open have failed to carry a crop, with the exception of the under branches—which fact would suggest that cold weather frustrated the setting of the fruits: and this belief is strengthened by finding that Plum trees on walls and fences are carrying full crops. The few fruits of Apples that we have belong to the early section; late sorts have more or less failed. *Charles Turner, Ampthill Park Gardens, Ampthill.*

Buckinghamshire—This is a most disappointing season for fruit. In some orchards and gardens scarcely a fruit is to be seen, and mildew and insect pests are rampant. Raspberries alone yielded an average crop and the canes are both healthy and strong. Currants, in many instances, are denuded of foliage by insect pests. Gooseberries are fairly clear of insect pests and mildew, and the young growth is clean and healthy. Our soil is a heavy, retentive loam resting on clay, and the natural drainage is bad. *W. Hedley Warren, Sunnymead, London Road, Buckland, Aylesbury.*

——Fruit trees were covered with bloom in the spring and gave promise of good crops, but, unfortunately, bad weather, coupled with a severe thunderstorm, spoilt the Apple crop. Strawberries have done well, but Cherries are only half a crop. Our soil is light and gravelly. *William Brooks, Abbey Gardens, Great Missenden.*

——The fruit crops are all fairly good and of fine quality, especially Strawberries, Raspberries, Plums, Black Currants and Apples. Pears are very poor, also Nuts. The soil is of a very light texture and the crops need plenty of rain. *G. Humphrey, Finefield Gardens, Slough.*

——Small fruits, including Currants, Raspberries, Loganberries and Gooseberries have been very plentiful, but the crops of Apples, Pears and Plums are much under the average. All fruit trees blossomed well, but heavy frosts did much damage to the flowers. The soil on the ridge varies very much, being heavy, strong and chalky. *Albert Adams, Ridgeway, Bledlow Ridge, West Wycombe.*

(To be continued.)

FRUIT GARDEN.

PEACHES DAMAGED BY LADYBIRDS.

This season, for the first time in twenty-five years' experience in growing Peaches I have found a number of fruits partially eaten by ladybirds. I have observed them carefully during the past week on a tree of Hale's Early, and am quite sure it is the fruit that they are eating and not insects.

I have always understood that the ladybird is a friend in every way to the gardener, but, with me, at the present, their reputation is under a cloud. It would be interesting to have the views of your readers on the subject. *W. C. S. Gillam.*

FRUIT REGISTER.

APPLE ROSEMARY RUSSET.

This fine late dessert Apple (see Fig. 87) is a general favourite with growers and may be found in most gardens where Apples are cultivated to any considerable extent, and especially in private establishments.

Mr. E. A. Bunyard, who is not prone to excessive praise, states of this variety, in a *Handbook of Fruits*, that it is "quite the best of the late winter Apples," an opinion with which most will agree. Hogg described it as "a valuable Apple of first-rate quality," in season from December until February.

The skin, which is yellowish-green slightly flushed with red, is covered with russet, the russetting being most marked around the eye and stalk portions. The flesh is crisp, yellow, tender and exceedingly finely flavoured with a rich and agreeable aroma.

A characteristic of the variety is its unusually long stalk, which is set in a wide cavity.

The tree makes moderate growth and is fairly constant in bearing. The origin of this excellent late Apple is unknown. Bunyard states that it was first recorded in 1831. *T.*

PEAR TRIOMPHE DE VIENNE.

This is a useful, early Pear, although not one of the very highest quality, yet it is prized by some, to whom Williams's Bon Chrêtien appears a little too musky.

The season of this Pear is September, and the fruits should be gathered before they become fully ripe; they are large, conical, yellow with a reddish flush and some slight greyish or russet markings. The flesh is white, tender and juicy, of good flavour, but sometimes a little gritty.

This variety makes an excellent bush or wall tree; the growth is vigorous, the tree is fertile and will thrive in most situations.

GOOSEBERRY WARRINGTON.

The value of this variety cannot be overestimated, and it should be planted freely in all gardens where quantities of berries are required for preserving; it is also a first-rate dessert variety, and by judicious management, a succession of berries may be maintained over a long season; from trees growing on a north border, it is possible to gather excellent fruits in October, and on a few occasions, I have seen quite good specimens sent to table in November.

The fruit is medium to roundish-oval in shape, red, almost black when ripe, with a few hairs. The bush possesses most formidable spines; it is a prodigious cropper. Warrington is a very old variety; it has been known since early in the nineteenth century.

PLUM ISABELLA.

Isabella is a most desirable variety of Plum either for dessert or for culinary use, yet it is not frequently met with in gardens. The tree is a consistently reliable croppper, of clean, vigorous growth, and succeeds admirably when planted on a south or west wall.

The fruits are of medium to large in size, obovate, in shape, and coloured dull red with a paler red on the shaded side, and speckled with a few darker dots.

The flesh is yellow, juicy and of good flavour and adheres to the stone. This is an excellent variety for preserving and useful for exhibition purposes. In Gloucestershire it has for many years proved to be of great value for use in early September, and has proved a most reliable sort.

According to Hogg's *Fruit Manual*, this Plum was raised at Ashton, near Bristol, about the year 1824, from seed of Red Magnum Bonum. *Ralph E. Arnold.*

VEGETABLE GARDEN.

WINTER SPINACH.

A dish of Spinach is acceptable at any period of the year, but in early spring, when variety in green vegetables is somewhat restricted, it is invaluable and plays such an important part in the dinner-table supplies that every gardener is anxious to serve it as early as possible.

A glabrous annual, native of northern latitudes, it is perfectly hardy and suffers more frequently from humid conditions than low temperatures. Although naturally a moisture-loving plant, its greatest enemy during the winter is excessive moisture, hence in choosing a site for present sowing, a warm, well-drained border, raised a little above the general level of the garden should be selected.

It is usual to talk of late summer-sown beds as winter Spinach, but usually the amount which can actually be gathered during the winter is negligible. Its real season is early spring, as plants which have withstood the winter are well-established, make good growth, and give abundant supplies of succulent leaves several weeks earlier than it would be possible to obtain them from spring-sown beds.

To produce first-class Spinach with thick, succulent leaves, rich in flavour, good cultivation is necessary, and in all cases the ground should be dug and manured liberally.

The date of sowing depends on the locality, but it is important that the plants which are intended for early spring supplies should not be sown too early, and on light soils in the southern counties the best time is during the first half of September.

Thin the plants in the early stages so that each has ample room for development, as plants which have been weakened by overcrowding stand little chance of surviving the vagaries of our winter climate. The surface soil should be kept stirred during the early stages of growth, and whenever the weather is favourable during the winter.

So soon as growth shows signs of activity at the turn of the year, a light dressing of sulphate of ammonia may be applied with advantage; a nitrogenous fertiliser is always stimulative of leaf growth, but the amount should be small, as these quick-acting fertilisers are readily washed away in the drainage water.

It is usually considered that the prickly-leaved varieties are more hardy than the round leaved type, but this is a moot point, and success depends much more on strict attention to cultural details than on choice of varieties. *A. P. C.*

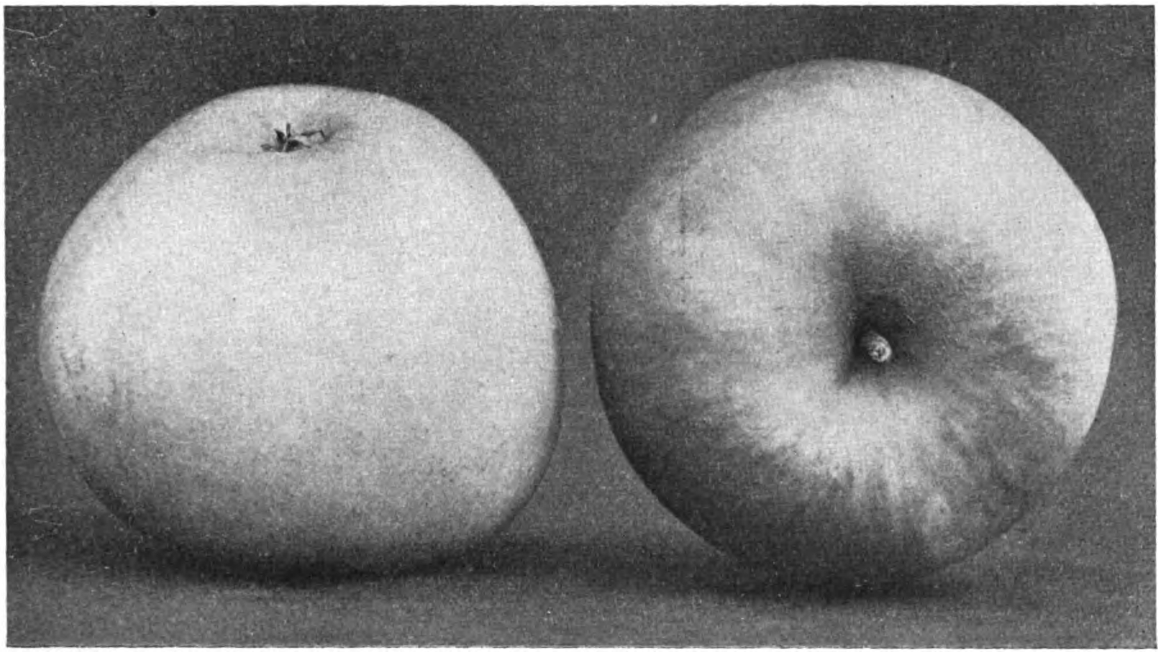


FIG. 87.—APPLE ROSEMARY RUSSET.
(see p. 174.)

PUBLIC PARKS AND GARDENS.

Plymouth Parks Committee recommends the Corporation to purchase Mount Pleasant Redoubt and land attached thereto, for use as a recreation ground.

The Walton-on-Naze Urban District Council has applied for an estimate of the cost of the purchase and conversion of Bath House meadow into a recreation ground.

The Urban District Council of Burgess Hill is negotiating for the purchase of land at the World's End for a recreation ground.

Nenagh Urban District Council is contemplating the purchase of grounds attached to the local disused military barracks for the provision of a children's park.

Ipswich Town Council proposed to purchase land in Gainsborough Lane, the Pond Hall Farm, and the enclosure adjoining Piper's Vale, comprising an area of about seventy-one acres, for £1,025. A portion of the land will be utilised for a pleasure ground and a portion for allotments.

Newry Urban District Council has received the permission of the Ministry of Home Affairs (Northern Ireland) to lay out the old pig market in Needham Street, as a children's recreation ground.

Pocklington Urban District Council has requested the Parks Committee to submit a scheme for laying out the land, given by Mr. T. S. Thirk, in the form of a miniature park.

Dewsbury Corporation is to negotiate with the agent of Savile estate for land near Thornhill Lees Church Institute bowling green for a recreation ground.

The Ministry of Health recently held an enquiry into an application made by Wallasey Town Council for sanction to borrow £9,400 for the purchase of the Cliff Estate, Wellington Road, New Brighton, for public walks and pleasure grounds.

I recently had the pleasure of being shown over one of London's lesser known parks, that is Roundwood Park, Harlesden Road, Willesden, N.W.10, by the superintendent, Mr. R. Thompson. The effective bedding of brilliant colouring was making a fine display, and I thought that some of your London readers might like to know that this park is well worthy a visit. Some of the bedding schemes showed great originality. A bed of the red Pentstemon Southgate Gem, with a standard of white-flowered Solanum jasminoides in the centre, and edged with yellow Calceolaria is making an attractive display. A bed of standard Heliotropes and the pink Geranium Galilee looks splendid on a groundwork of white Alyssum. Another bed of Pelargonium Reformata, a good orange scarlet, is making a fine show of colour. This variety is well suited to a large bed, being very floriferous. Among other plants used in bedding to great effect are the dark Plum-coloured Perilla nankinensis, Begonia semperflorens, Kochia trichophylla, and standard Fuchsias and Dahlias. The last includes a variety of sterling merit named Paul Crampel. It is of the decorative class and of dwarf habit, being about two-and-a-half to three feet tall.

It bears a profusion of large, light, terra-cotta-red flowers, which are distinctly darker in the centre. It is an ideal bedding plant. Mr. Thompson is to be congratulated on his art and industry, and the Willesden inhabitants are fortunate in being the possessors of such a fine park. *A. Donald Blaxill.*

HOME CORRESPONDENCE.

Silver-leaf Disease.—I agree with *A. J. M.* (p. 155) as to the danger of silver-leaf on trees in private gardens; but he is evidently under a misapprehension as to the law on the subject. Silver-leaf is no longer a notifiable disease, and there is nothing in the Silver-leaf Order to compel growers to destroy trees which show silvering of the leaves. All that the order enforces is the cutting out and burning of all dead wood in Plums and Apples before July 15 each year. The fungus does not fructify until the wood is dead; so there is no danger of the spread of the disease from trees that have only reached the silvered stage. Young trees often recover; therefore, it is not advisable to destroy these unless they begin to show signs of dying back. As for silvered branches in older trees, gardeners are free to do as they like about these. In their own interests they should cut them out, as by so doing the rest of the tree may sometimes be saved. *Market Grower.*

Cabbage Butterflies.—In his interesting article on Cabbage Butterflies and their caterpillars (page 129), *K. M. S.* repeats the statement made by many previous writers on entomology, namely, that the parasite-fly—Apanteles glomeratus—deposits its eggs in the body of the caterpillar, and that when the maggots are hatched, they feed upon the tissues of their passive host, avoiding injury to its vital organs. It was reserved for that most industrious and original naturalist, the late T. Henri Fabre, to prove that this statement is erroneous in both its branches. In his book, *The Life of the Caterpillar,* he describes how he assembled gravid female Apanteles with Caterpillars of Pieris in glass tubes. The ichneumon flies paid no attention whatever to the caterpillars; whereas, when they were confined in tubes containing clusters of Pieris eggs, they behaved very differently. I quote Fabre's description of the scene from the translation by the late A. T. de Mattos:—"They inspect the treasure, flutter their wings and brush their hind legs against each other, a sign of keen satisfaction. They sound the heap, probe the interstices with their antennae and tap the individual eggs with their palpi. Then, this one here, that one there—they quickly apply the tip of their abdomen to the egg selected. Each time we see a slender horny prickle darting from the ventral surface . . . . the operation is performed calmly and methodically, even when several mothers are working at the same time. Where one has been, a second goes, followed by a third, a fourth and others yet, nor am I able definitely to see the end of the visits paid to the same egg. Each time the needle enters and inserts a germ." Fabre is equally positive that the ichneumon grubs are incapable of devouring the tissues of the caterpillar. The mouth "is a pore, devoid of any apparatus for disintegration work. It has no fangs, no horny nippers, no mandibles." The grubs live in the stomach and entrails of the caterpillar, sometimes in considerable number, and subsist by absorbing the juices of their host's food. The service rendered to gardeners by Apanteles in destroying the caterpillars of Pieris is considerable. Fabre found that about seventy-five per cent. of the caterpillars he kept under observation were infected by the parasite and died when they ceased to feed before pupation. The ichneumon grubs issue so soon as the supply of food ceases, and spin themselves into little yellow cocoons heaped around the corpse of their late host. Gardeners should warn their assistants not to destroy these cocoons, as is often done in the belief that they are the eggs of Pieris. *Herbert Maxwell, Monreith.*

SOCIETIES.

BRITISH GLADIOLUS.

Whatever the future may hold in store for the newly-formed British Gladiolus Society, it must be unreservedly admitted that the show held at Burton-on-Trent was the best exhibition of this one flower that has yet been held in England, and, great as the vogue of the Gladiolus is in America, it is a very moot point whether the American Gladiolus Society with its big membership and several years' existence could surpass the excellence of this first effort of our own Gladiolus Society in the provinces.

Notwithstanding the knowledge that it has been decided to hold next year's show in London, it is in the provinces the best field for serviceable propaganda lies, and by holding this year's show in the midlands thousands of garden owners have been impressed with the beauty and grandeur of Gladioli who would never see a show in the Horticultural Hall, Vincent Square.

As one entered the big tent, which was remarkably well-filled with exhibits, the first impression conveyed to the mind was that Gladioli cut and staged with some idea of showmanship are infinitely more striking and effective than when growing in beds or borders on the flat. Closer investigation emphasised the superiority of the "groups" in the matter of pleasing effect, and this, despite the very much better quality of the individual spikes of bloom staged in the smaller classes for specific numbers of spikes. It should be made a subject of immediate and careful study by the members of the newly-formed society, for it will have taken a goodly stride towards justifying its existence if it will devise and adopt a method of staging single spikes which will make these classes spectacular. This can be done, but not while flat staging and jasper vases are used.

The size, colours and general quality of the large-flowered Gladioli commanded admiration; it would puzzle the greatest of experts to-day to separate gandavensis, Lemoinei, Childsii or Nancieanus, except in a small minority of instances, where the characteristics of the favourites of years past have been preserved, but it would be less difficult, with a large proportion of varieties at any rate, to allocate them to their countries of origin. Among the various exhibits were to be found the best of modern French, Dutch, German and American varieties, as well as those of British breeding, and one could discern throughout the persistence with which each displayed certain good features and certain faults. It is gratifying to note that in two British stocks there was clear evidence that the goal is being steadily approached, whereby a race may be proclaimed to combine the good points and eliminate the weaknesses.

The Primulinus hybrids, naturally, claimed a large share of attention, and some remarkably fine varieties were on view, but, as was anticipated, size has been so keenly followed that many of the newer varieties are of totally different form to the dainty flowers which so charmed everybody when the Lang-prim hybrids first came on the scene. There was an almost entire absence of branching spikes in any of the flowers shown at the Burton show, and, ere it is too late, let the British Gladiolus Society think carefully of the desirability of encouraging the firm establishment of a small, slender branching, stemmed section of the Primulinus class, however much the big Primulinus, the medio-primulinus, the quarter-prims and giant-prims may be nursed and favoured. One could say much concerning the possibilities of a model or ideal schedule for the Gladiolus show, but finance steps in at this point, and it would be an undeserved unkindness to write anything to the disparagement of a fine achievement for so young a society. In order to fully accomplish the rightful mission of such a society, there should be separate classification for varieties of market value, prizes for the best and most workmanlike packages as well as for the most serviceable varieties with which to fill them. There should be classes which will educate the public as to the varied uses of which the Gladioli are capable, and of the methods by which they may be put to these uses. These are matters which directly concern the market grower, the market salesman and the retail florist. They, in their own interests and in the interests of a flower which is rapidly advancing in popularity have the opportunity, if they will, to rally to the support of a society whose shows are calculated to do an immensely beneficial work—if adequate finances are forthcoming.

ROYAL HORTICULTURAL.

August 24.—The exhibition at the fortnightly meeting held on Tuesday last was surprisingly good in view of the fact that many exhibitors were attending the Southport Show and having regard to the holiday season. The attendance, however, was much smaller than usual.

The principal subjects displayed were Dahlias, Gladioli, Phloxes, Roses, Carnations, Clematis and hardy flowers. The Foremarke Cup, offered for Gladioli, was won by Messrs. G. Mair and Sons.

There was only one group of Orchids, but several novelties in Orchids gained awards.

Awards were made by both sections of the Floral Committee, and eleven Dahlias were selected for trial at Wisley.

The outstanding exhibit of the show was a magnificent group of hothouse fruits, shown by Baron Schröder, for which a Gold Medal was awarded.

Orchid Committee.

Present: Mr. H. T. Pitt (in the Chair), Mr. Stuart Low, Mr. R. G. Thwaites, Mr. E. R. Aston, Mr. T. Armstrong, Mr. J. E. Shill. Mr. H. H. Smith, Mr. A. Dye, the Hon. H. D. Maclaren and Mr. Gurney Wilson (Hon. Secretary).

Awards.

First-Class Certificate.

Potinara La Paz.—The perfectly-balanced flower of this variety is a model bloom in every respect. The petals and sepals are butter-yellow against which the handsome purple lip, which has rich gold in the interior and dense lines of deep rosy purple towards the throat, shows to the fullest advantage. Exhibited by Baron Schröder (gr. Mr. Shill).

Awards of Merit.

Laelio-Cattleya Jacquinetta.—The large bloom of this fine Laelio-Cattleya has a very richly-coloured lip of rosy purple. The other segments are mauvy purple, and the petals are stained with a deeper colour towards their apices. The lip is finely crenated and there are coloured lines running in towards the column in the centre. Shown by Messrs. Stuart Low and Co.

Odontioda Nubia (Oda. Eric × Odm. Georgius Rex).—This very beautiful variety has flowers of perfect form, each some two-and-a-half inches across. The outer portions of the segments are coloured deep plum-purple, divided by a white, irregular line from the central portion which has deep maroon blotches on a purplish ground. The yellow ridges running from the lip give a very pleasing touch of brightness. Shown by Messrs. Charlesworth and Co.

Cultural Commendation

This award was made for a magnificent specimen of Dendrobium filiforme carrying thirty-eight spikes and bearing altogether 3,700 blooms. Shown by Messrs. Armstrong and Brown.

Groups.

Mr. H. T. Pitt (gr. Mr. Thurgood), Rosslyn, Stamford Hill, staged a very pleasing group of miscellaneous Orchids, amongst which we noticed fine specimens of Cattleya Hardyana President Wilson, Cattleya Lord Rothschild, C. Triumphans, Cypripedium L'Ansonii, Laelio-Cattleya Senator, Odontoglossum crispum purpurascens, O. c. Wedding Bells, Zygopetalum

(Promenaea) stapelioides, and Miltonia William Pitt.

Messrs. **Black and Flory** showed two fine Cattleyas in C. Eleanore alba var. Connie and C. Lorna var. Doris.

Floral Committee.

Present: (Section A).—Mr. Henry B. May (in the chair), Mr. F. J. McLeod, Mr. D. B. Crane, Mr. James B. Riding, Mr. A. Vasey, Lady Beatrix Stanley, Mrs. E. M. Wightman, Mrs. Helen Lindsay-Smith, Mr. Mark Fenwick, Mr. W. A. Bilney, Mr. J. M. Bridgeford, Mr. Hugh Dickson, Mr. William Howe, Mr. F. Streeter, Mr. W. P. Thomson and Mr. Charles E. Pearson.

Section B.—Mr. Charles T. Musgrave (in the chair), Mr. W. G. Baker, Mr. L. R. Russell, Mr. Reginald Cory, Mr. T. Hay, Mr. R. W. Trotter, Hon. Henry D. McLaren, Mr. Mark Fenwick, Mr. W. A. Bilney and Sir William Lawrence, Bt.

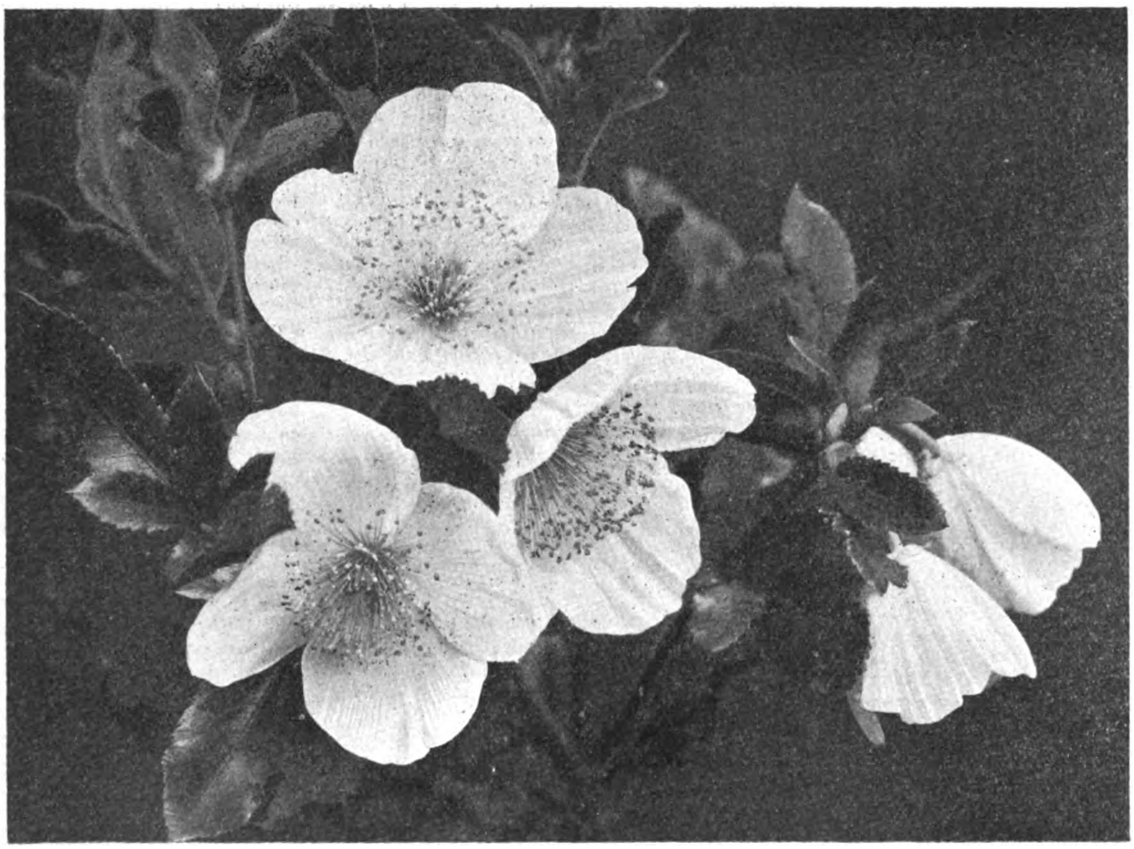


FIG. 88.—EUCRYPHIA NYMANSAY.

(See Awards by the Floral Committee.)

FIRST-CLASS CERTIFICATE.

Eucryphia nymansay.—This handsome shrub received an Award of Merit on August 26, 1924. It is a hybrid between E. pinnatifolia and E. cordifolia. The flowers resemble those of E. cordifolia in their perfect symmetry, but they are decidedly larger and have very bright golden stamens. From the examples shown it seems to be exceptionally free-flowering. Shown by Lt.-Col. **Messell**, O.B.E. (gr. Mr. J. Comber), Nymans, Handcross, Sussex.

AWARDS OF MERIT.

Antirrhinum bellidifolium.—A dwarf, erect, little perennial from the Mediterranean regions, which bears plenty of small tubular flowers of pale lavender colour. The linear leaves are about an inch long. Shown by Mr. T. **Hay**.

Phlox Lord Lambourne.—A perennial variety of good form and bearing well-shaped salmon-coloured flowers with white centres.

Phlox Mauve Queen.—This is of similar type and habit to the foregoing. The outer half of the flower is mauve and the centre is white. Both were shown by the Hon. **Vicary Gibbs**.

Montbretia E. A. Bowles.—Excellent spikes of flowers of a lovely rose-cardinal shade, with a pale crimson zone and yellow throat were shown.

Montbretia Lord Lambourne.—Another excellent variety. The flowers were a little larger, though not quite so round. This is a rich orange, heavily flushed with cardinal. The yellow colour of the throat extends to the base of the flower. Both were shown by the Hon. Mrs. **Montagu** (gr. Mr. J. E. Fitt), Attleborough, Norfolk.

The following Dahlias were selected by the Joint Committee for Trial at Wisley:—

Burford Star.—A fiery orange variety of the well-known Star type. Shown by Messrs. J. **Cheal and Sons**.

Cheerful.—A rich crimson variety of the Camellia-flowered type. Shown by Messrs. J. **Cheal and Sons**.

Daily Mirror.—A large decorative variety, stippled with deep pink. This and the following were shown by Messrs. **James Stredwick and Son**.

Hyde Park Beauty.—A large Decorative variety of rich rosy mauve colour.

Mannequin.—A medium-sized Cactus Dahlia of good form and pale primrose colour.

Mary Segar.—A large but rather straight-petalled Cactus variety of a medium shade of yellow colour.

Rosa Taylor.—A Decorative variety, well set on stout stalks, of crimson-maroon colouring.

Thomas Hay, V.M.H.—A large Decorative variety of lilac colouring.

Thomas Want.—A large Cactus Dahlia of yellow colour, heavily flushed with rich rosy mauve on the outer florets.

Trophy.—A splendidly-formed Cactus variety with rolled, incurving florets of rosy salmon colour.

W. D. Cartwright.—A beautiful Decorative variety of golden amber colour.

GROUPS.

Gladioli were extensively shown by many of the chief growers, and the general standard of quality was decidedly high. Messrs. **Kelway and Son** had a very large group of splendid spikes which included, amongst the many large-flowered varieties, Captain Foster, glowing salmon; Vanessa, pale salmon; Langport Favourite, rich crimson; Prince Arthur, deep crimson; The King, bright rose with cerise blotch; and Negro, dark maroon. The graceful Primulinus hybrids were represented by Maculatus, yellow; Golden Girl, rich yellow shaded with bronze; Maiden's Blush, Princess Elizabeth, bright salmon, and many other good varieties.

Near the entrance, Messrs. R. H. **Bath, Ltd.** had a large and gracefully-arranged collection of Gladioli. Amongst the many large-flowered varieties we especially noted Willy Wigman, Viola, Byron L. Smith, Prince of Wales and Chris, while the chief Primulinus varieties were L'Orillon, L'Arques, Revue, Xanthia and Attalia.

On the opposite side of the entrance, Messrs. **Dobbie and Co.** staged an excellent collection of pedigree seedlings raised by Messrs. G. Mair and Sons. These were characterised by stout, erect stems carrying four and more fully open flowers of large size and delightful colours.

Gladioli in quantity and of considerable excellence were associated with herbaceous Phlox, Kniphofias and other border flowers by Mr. G. G. Whitelegg. The chief Gladioli were Vesta Tilly, white with lilac blotch; Schwaben, primrose yellow, and Queen Wilhelmina, salmon, with cerise blotch, though there were many other large-flowering varieties and vases of the Primulinus hybrids, including Orange Queen and L'Innocence, of pale primrose colour.

The Orpington Nurseries, Ltd., arranged a tasteful collection of Gladioli; the chief varieties were Red Emperor, Prince of Wales, Duchess of York, deep violet, and White City. They also staged vases of very good seedlings. Messrs. Hewitts, Ltd., also had immense spikes of Red Emperor and, in addition, set up good spikes of Dawn, salmon, with crimson blotch; Marechal Foch, White Giant, Purple Glory, Rose Precocé and Lovefire, of vivid scarlet colour. They also displayed good Primulinus hybrids.

Roses of good quality were attractively grouped by Messrs. Chaplin Bros., whose chief varieties were Lady Inchiquin, Lord Charlemont, Golden Emblem, Souvenir de Claudius Pernet and Mrs. Henry Bowles. Massed vases of such Decorative varieties as Moonlight, Pax, Los Angeles, Mermaid, Souvenir de Claudius Pernet and Padre were shown by Mr. J. H. Pemberton, while Messrs. A. J. and C. Allen set up very good vases of Mabel Morse, Innocence, K. of K. and Mrs. Henry Bowles.

In his customary exhibit of shrubs and herbaceous perennials, Mr. G. Reuthe included interesting sprays of Clethra alnifolia, Escallonia illinita and Berberidopsis corallina. Messrs. L. R. Russell, Ltd., arranged, on a floor space, a group of Clematis, vines and other ornamental shrubs. The Clematis included President and Daniel Dorondo, dark blue; Lady Caroline Neville, lavender; and the free-flowering Comtesse de Bouchard.

Mr. H. Hemsley staged another selection of his admirable Sidalcea seedlings with a collection of Dahlias, and Messrs. Isaac House and Son showed their good varieties of perennial Scabious.

A large collection of cut trusses of herbaceous Phlox was displayed by Messrs. J. Cheal and Sons. The chief varieties were Le Mahdi, purple; Evelyn, rosy-salmon; Mia Ruys, white; Pantheon, pink; and Marshal French, deep pink. On the staging, they showed vases of Dahlias, chiefly of the Star type.

Carnations of their usual good quality were displayed by Messrs. C. Englemann, Ltd., and Messrs. Allwood Bros. The former included, in Nero, Chintz, Lady Hindlip and Marion Wilson, free-flowering Fancy varieties, while the latter had vases of Edward Allwood, Triumph and Beauty of Durham, of bright colours.

Spikes of the uncommon Lilium auratum platyphyllum rubro-vittatum were shown by the Yokahama Nursery Co. This variety, which received an Award of Merit in 1885, is distinct in the broad band of reddish-brown replacing the yellow rays of the species. The flowers are also spotted with the same attractive colour.

The Foremarke Challenge Cup, which is offered for the best collection of twenty spikes of named Gladioli, in not fewer than ten varieties and not more than two spikes of one variety, was won by Messrs. G. Mair and Sons with excellent spikes. Their varieties included Sunset, pale salmon; King George, bright crimson with pale yellow blotch; Royal Pink; Caly, bright salmon with creamy blotch and line; and Gertrude, shades of puce and heliotrope.

Many herbarium specimens of the trees, shrubs, herbaceous plants and alpines, collected by Mr. Harold F. Comber, during the Andes Expedition of 1925 and 1926, attracted a deal of well-deserved attention. There were also clear photographs of the scenery and of various trees and plants.

Fruit and Vegetable Committee.

Present: Mr. J. Cheal (in the chair), Mr. G. Tinley, Mr. W. H. Divers, Mr. A. Bullock, Mr. F. Jordan, Mr. E. Laxton, Mr. E. Neal, Mr. H. Markham, Mr. J. Harrison, Mr. E. A. Bunyard, A. Metcalfe and Mr. A. N. Rawes.

Messrs. Laxton Bros. showed several new varieties of Apples and Plums. The most promising was Laxton's Bountiful Plum, raised from Red Magnum Bonum × Victoria. It is a free-stone variety, somewhat of the Victoria type, but smaller, and is said to ripen ten days earlier than Victoria. This variety was recommended for trial at Wisley. Prune Black Knight, raised from Black Diamond Plum × Fairleigh Prolific Damson, appears to be a very useful variety of the early Prune type of fruit.

Group.

Baron Schröder (gr. Mr. H. J. Henderson) exhibited a magnificent group of indoor fruits. The collection was arranged in the best exhibition style on tiers of staging covered with black velvet and with dainty Cocus Palms and festoons of Smilax for decoration.

Of Grapes, there were five fine bunches of Muscat of Alexandria and eight of Black Alicante. The back row was composed of choice fruits of Melons of the Royal Jubilee variety. Splendid Pears were shown in Marie Louise, Durondeau, Marguerite Marrilat, and there were choice Peaches of the varieties Sea Eagle, Marquis of Downshire, Walburton Admirable and Grosse Mignonne, whilst the Pineapple Nectarines were excellent. Several dishes of Apples, such as Peasgood's Nonesuch, Queen Mary and The Houblon, together with Plums and Apricots completed the exhibit.

Wisley Trials, 1926.

The following awards have been made to the undermentioned annuals by the Royal Horticultural Society after trial at Wisley.

Cosmos.

Award of Merit.

White, sent by Messrs. W. H. Simpson.

Highly-Commended.

Rose Queen, sent by Messrs. Dobbie and Co.; Crimson, sent by Messrs R. Veitch and Son and Messrs. W. H. Simpson.

Lavatera.

Award of Merit.

Splendens Sunset, sent by Messrs. Watkins and Simpson and Messrs. W. H. Simpson.

Highly Commended.

Splendens alba, sent by Messrs. W. H. Simpson; splendens rosea, sent by Messrs. Barr and Sons.

Nemesias.

Highly Commended.

Orange Prince, sent by Messrs. W. H. Simpson; Fire King, sent by Messrs. W. H. Simpson; Blue Gem, sent by Messrs. Watkins and Simpson; Dwarf Compact Hybrids, sent by Messrs. W. H. Simpson; Dwarf Rainbow, sent by Messrs. J. Carter and Co.; New Dwarf Hybrids, sent by Messrs. Barr and Sons; strumosa Suttonii, sent by Messrs. Barr and Sons and Messrs. Daehnfeldt and Jensen; strumosa reticulata, sent by Messrs. Watkins and Simpson; Large-flowered Mixed, sent by Messrs. J. Carter and Co.; Triumph, sent by Messrs. Heinemann and Co.; Large-flowered, sent by Messrs. R. Veitch and Son.

Viscaria.

Highly Commended.

Egret, sent by Messrs. J. Carter and Co.; oculata, sent by Messrs. R. Veitch and Son; Blue Bird, sent by Messrs. J. Carter and Co.; Fire King, sent by Messrs. Watkins and Simpson; No. 23 (sent as Blue Gem in error), sent by Messrs. Barr and Sons; oculata coerulea, sent by Messrs. W. H. Simpson.

SOUTHPORT FLORAL FÊTE.

In its third year the Southport Show has exceeded in extent the Chelsea Show. Our readers will know that the flower show at the "Garden City by the Sea" is run by the Corporation as a high-class attraction, but it must be remembered that the public parks and gardens of Southport, as well as many private gardens, had already marked out this fine Lancashire seaside resort as a place of great horticultural attractions and possibilities. It is old news that the initial show at Southport was the finest "first" show ever known; from that success the show has progressed amazingly. This year, on August 25, 26 and 27, the greater part of the exhibits was accommodated in a huge six-span tent; five of the spans measured 240 feet by 46 feet, and the sixth 180 feet by 46 feet. In addition there were three big marquees, 240 feet by 40 feet; moreover, the seven rock gardens, several formal gardens and very large numbers of exhibits which come under the general heading of horticultural sundries.

The setting for the show is also first-rate, for besides the attractions of Victoria Park, where the show is held, there is the wonderful long herbaceous border just outside the park—a flower show in itself.

All the show arrangements were, as usual, first-rate. Mr. Clayton and his Committee taking a personal interest in everyone and everything, while Mr. Wolstenholme is a splendid secretary, organiser and advertiser, and Mr. Clarke carries out his duties of Show Superintendent as efficiently and urbanely as he does those of Superintendent of the Southport's Public Parks.

The show provided a feast of floral grace and colour rarely seen and impossible to describe adequately, and to this feast the trade exhibitors brought a magnificent contribution, both in the competitive and the non-competitive sections, but chiefly in the latter. Gladioli were the outstanding flowers, and the many big displays—of which Messrs. Sutton and Sons' was the biggest and boldest—provided evidence of great popularity of this autumn subject. Next in effectiveness were the dozen or so of groups arranged for effect, one set consisting of non-flowering plants, and the other of flowering and foliage plants. These were a great attraction and one which those who only visit London shows have an opportunity of enjoying. All the leading competitors in this section once again fought out their bloodless battles. Other fine features were the grand groups of hardy flowers, Dahlias, Carnations and Roses. Vegetables were excellent, and in this department of the show the display made by the Hon. Vicary Gibbs (gr. Mr. Edwin Beckett), Aldenham, was the outstanding feature. Fruit, too, notwithstanding the untoward season, was better shown than in the two previous years.

Groups.

The two principal group classes combined to make a display of great beauty, and such a veteran exhibitor as Mr. John Cypher opined that no such avenue of groups had ever been seen before.

The Silver Challenge Trophy presented by the Southport Cinema and Variety Theatres, together with a cash award of £50 was won by Messrs. James Cypher and Sons, Cheltenham, with a delightfully elegant arrangement of well-grown plants. The background of Palms, Humea elegans, Ixoras, Codiaeums and Selaginella caesia was very pleasing and graceful, while the body of the group was composed of elegant spires of Humea elegans, bright-leaved Codiaeums, Gesneras, beautiful Ixoras, Haemanthus, Cattleyas in variety, Lilium speciosum, L. auratum and Francoa ramosa. There was a satisfying finish to this exhibit which was lacking in other groups. This group was also awarded the Brunner Cup offered for the best competitive exhibit in the show.

There were six competitors and second prize was awarded to Mr. W. Holmes, Chesterfield, whose brilliantly coloured Codiaeums were a fine feature;

these were pleasingly associated with Gesneras, Francoa ramosa, Cattleyas, Liliums, Ixoras and Odontoglossums. The central part of the background was a trifle poor, and it is only the gentlest of criticisms to suggest that the Codiaeums were a little too freely used. Third prize was won by Sir George Kenrick (gr. Mr. Jas. Macdonald), Whetstone, Edgbaston, Birmingham, whose central feature was very pleasing and consisted of a number of well-grown plants of Brassavola, all freely flowered, and grouped with Gesneras and Oncidium flexuosum around an elegant Francoa ramosa. Codiaeums, Nandina domestica, Alocasias and Bromeliads were other features in this fine exhibit from a private garden.

Fourth Prize fell to Mr. W. R. Manning, Dudley, and the judges recommended extra prizes to Mr. J. M. Petch, Bradford and T. M. Moore, Esq. (gr. Mr. J. McGoogan), Billtown, Castletown, Isle of Man, whose exhibit contained such interesting plants as Platycerium grande, Anthurium crystallinum and Sansevieras.

On the opposite side of the avenue the groups of foliage plants were arranged and these were only a little less effective than those in the former class. Here the premier award of £35 was won by Mr. W. E. Holmes whose well-grown and brilliantly coloured Codiaeums were a strong and effective feature, Palms, Caladiums, Rex Begonias, Alocasias, Phyllanthus and Nandina domestica were used as a setting for the Codiaeums. Second prize went to Messrs. Cypher and Sons whose tall Codiaeums lacked the effective brilliance of those in the first prize exhibit ; the general arrangement was excellent. Mr. W. R. Manning gained third prize and Sir George Kenrick fourth.

Hardy Flower Groups.

Messrs. M. Prichard and Sons, Christchurch, won the premier award in this big class for a collection of perennial and hardy herbaceous flowers arranged on a space of 300 square feet and they had a grand display that was just a trifle crowded. Kniphofias were a bold and pleasing feature, and other great attractions were Crinum Powellii and C. P. alba, Montbretias in great variety, the dainty Agapanthus umbellatus albus, Lilium speciosum album, Poterium obtusatum and Liatris pycnostachys. Messrs. G. Gibson and Co., Leeming Bar, gained the second prize and Mr. K. Therkildsen, Southport, the third.

Messrs. Bees, Ltd., led in the class for hardy flowers and annuals arranged on a space of 300 square feet and they put up a beautiful exhibit of capital subjects all arranged in a very pleasing manner. Gladioli, Scabious, Kniphofias, Lilium tigrinum, L. speciosum, L. auratum, Verbascums, Dahlias and Phloxes were the leading subjects in this altogether delightful exhibit to which was also awarded the Silver Challenge Trophy offered by the Southport Chamber of Trade for the best exhibit in these two classes. Messrs. Harkness and Son, Bedale, were second to Messrs. Bees.

Awards to Non-Competitive Exhibits.

People's Cup, for the best non-competitive exhibit in the Show, to the King's Acre Nurseries, for fruit trees in pots.

Large Gold Medals. — To Messrs. James Carter and Co., for Lilies, etc. ; to the King's Acre Nurseries, for fruit trees in pots ; Messrs. Isaac House and Son, for Scabious ; Messrs. Charlesworth and Co., for Orchids ; Messrs. J. Peed and Son, for stove and greenhouse plants ; Messrs. W. H. Simpson and Sons, for hardy flowers ; Messrs. Sutton and Sons, for Gladioli ; the Hon. Vicary Gibbs, Aldenham, for vegetables ; Mr. W. J. Unwin, for Gladioli ; and to Messrs. Dickson and Robinson for Dahlias.

Gold Medals—To Cheadle Mental Hospital, for a miscellaneous group ; Messrs. Daniel Bros., for hardy flowers ; Messrs. Dobbie and Co., for Dahlias and Potatos ; Messrs. E. Fairbairn and Sons, for Phloxes ; Mr. H. J. Jones, Lewisham, for Phloxes ; Messrs. Mahood Bros. ; Messrs. L. R. Russell, for Clematis ; Messrs. T. Rivers and Son, for fruit ; Mr. T. Smith, Newry, for hardy flowers ; and to Messrs. Alex. Dickson and Sons, for Roses.

Silver-Gilt Medals.—To Messrs. Allwood Brothers, for Carnations ; Messrs. Backhouse, for alpine plants ; Messrs. Blackmore and Langdon, for Delphiniums ; Mr. H. Clark, for hardy flowers ; Mr. Robert Hayes, for alpine plants ; Mr. Johnson ; Messrs. Kelway and Son, for Gladioli ; Messrs. Stuart Low and Co., for Carnations and Orchids ; Messrs. Maxwell and Beale, for hardy plants ; Mr. Amos Perry, for aquatics ; Mr. E. J. Rigg, for alpines ; Messrs. Toogood and Sons, for Gladioli ; Messrs. Sutton Bros., for Orchids ; Messrs. Webb and Sons, for Gladioli, etc. ; Mr. W. Wells, junr., for hardy flowers ; Messrs. Wood and Ingram ; Messrs. Waterer, Sons and Crisp, for hardy flowers ; and to Mr. John Forbes, for Pentstemons and Phloxes.

Silver Medals.—To Messrs. Artindale and Son, for Gladioli, etc. ; Messrs. R. H. Bath, for hardy flowers ; Messrs. Bakers, for hardy flowers ; Messrs. Clibrans, for hardy flowers ; Garden Supplies, Ltd., for Gladioli, etc. ; Chalk Hill Nurseries, for hardy flowers ; Messrs. Hewitt and Co. ; Mr. John Jones ; Messrs. Jones Bros. ; Kippen Vinery Co. ; Mr. Keeling, for Orchids ; Mr. J. Klinkert, for topiary ; Messrs. Laxton Bros., for fruits ; Mr. Robert Mawson ; Messrs. Middlehurst ; Messrs. E. J. Parsons and Co., for fruits ; Mr. Rich, for hardy flowers ; Messrs. Sanders, for Orchids, and St. Stephen's School.

(*To be continued.*)

NATIONAL ROSE.

The Special Jubilee Provincial Show of the National Rose Society was held in one of the large bays of the great tent in Victoria Park, Southport, in conjunction with the great Southport Show. Recent stormy weather somewhat reduced the number of entries, and its effect could be seen on many of the blooms, nevertheless the show was a good one and provided a further demonstration of the garden value of Roses in other months than those of June and July.

The principal prize-winners were Mr. Thos. Robinson, Mr. Elisha J. Hicks, Mr. George Prince, Mr. John Mattock, Mr. H. Drew, Mr. C. Gregory, Messrs. Bees, Ltd., and Mr. G. Marriott.

No fewer than thirty Roses were exhibited, but no Gold Medals were awarded. Certificates of Merit were granted to Mrs. G. A. Wheatcroft, shown by Messrs. Wheatcroft Bros. ; Patience, shown by Messrs. S. McGredy and Son ; to Portadown Yellow and Sir David Davis, also shown by the Portadown firm.

We hope to give a fuller report of the show in our next issue.

SCOTTISH PANSY AND VIOLA.

At the third conference of this Society, held at Glasgow on the 21st inst., large numbers of seedlings were staged for awards.

Certificates were granted as follow :— Fancy Pansies *Dan Cochrane and Mrs. Thomas Brown*, shown by Mr. Alex. Cochrane, Fauld House, who also secured a First Class Certificate for a Viola named *Mary Raeburn*, and a Certificate of Merit for *Rita Cochrane*. Certificates of Merit were granted to three Violas, *May Gray*, *Milton Beauty* and *Mrs. Jack Bell*, shown by Mr. Quinten McFadyean, Carluke ; *Peggy Tennant*, shown by Mr. William Tennant, Harthill ; *D. Stevenson*, raised by Mr. D. Stevenson, Barrhead, and *Ferencze*, shown by Mr. W. Hime, Barrhead.

After the judging was over, the annual meeting was held, when Major R. S. Milne, Bridge of Weir, President ; Mr. William Dobbie, Renfrew, Hon. Sec., and other officials were re-elected.

Obituary.

R. W. L. Forrest.—We regret to learn of the death of Mr. R. W. L. Forrest, who had been a member of the Wimbledon and Putney Common Conservators for over six years. He was also Hon. Treasurer of the Commons Extension Fund and took a leading part in the opening of the Memorial Extension Lands of forty-two acres at Kingston Vale last year. He was buried on August 20.

Sir Arthur Pendarves Vivian, K.C.B. — Sir A. P. Vivian, who died at Bosahan, on the 18th inst., at the age of ninety-two, had long been an amateur gardener of distinction in a county of distinguished amateurs, and though of late years the infirmities of age had made it increasingly difficult for him to keep abreast of all the new discoveries in plant life at which younger men, especially in Cornwall, delight to try their hands, he had made liberal additions to his garden during his active life and lived to enjoy the fruits of his planting. Almost up to the last, too, those fruits were familiar to visitors to the R.H.S. shows at Vincent Square, where exhibits from Bosahan were always object lessons in what can be done with plants in the milder districts of the country. Bosahan lies on a high plateau above the Helford river, and to the casual visitor seems exposed to all the winds that blow. But apart from shelter planting which has been wisely conceived, gales pass harmlessly over the two long valleys which stretch almost from the house to the mouth of the Helford river, and are alone worth a long journey. These sheltered valleys provide as ideal a setting for sub-tropical vegetation as can probably be found in England or Scotland, and Sir Arthur Vivian made full use of the opportunities they afford the keen cultivator. The exuberant growth of the Tree Ferns, which are such a feature of Bosahan, would be sufficient indication of the softness of the climate, without the Chusan Palms, which are even more numerous. Bosahan is rich in fine specimens of Himalayan species of Rhododendron, which have been there long enough to show their true form, and it is doubtful if any other garden in Cornwall or out of it can match the fine tree of R. grande which is to be found in the lower end of the valley, and a year or two ago, was twenty-two feet high. Only a little less is a remarkable example of R. barbatum and another of R. Thomsonii. The growth of the Himalayan Rhododendrons at Bosahan gives point to the remark, attributed to Sir Joseph Hooker, that these noble plants would be found to flourish to better purpose in some parts of Britain than in Sikkim, but he could hardly have expected the more tender species to grow so happily as they do there. After the luxuriant growth of the Tree Ferns, Chusan Palms and Rhododendrons, a specimen of Drimys Winteri over forty feet high and in full flower, may seem something of a climax, but the Madeiran Lily-of-the-Valley Tree, Clethra arborea, is even more remarkable, and there are many other species which cannot be grown at all in less favoured places.

Winifred Blair White.—The many friends of Mr. Edward White, of Messrs. Milner, Son and White, will hear with regret of the loss he has sustained by the death of his wife, at the age of fifty-three. Mrs. White, who was the second daughter of the late Henry Ernest Milner, the landscape gardener, leaves two sons and one daughter.

ANSWERS TO CORRESPONDENTS.

CATERPILLAR FOR IDENTIFICATION.—*A. R.* The caterpillar is a full-grown specimen of the Puss Moth, Dicranura vinula. The eggs are deposited by the parent moth on the leaves of Willows and Poplars, and when the larvae hatch out they feed on the leaves of these trees.

CYANIDE FOR THE CONTROL OF MEALY BUG.—*A. T. S.* We think that the concentration of either Cyanogas or sodium cyanide, required to kill the mealy bug during the leafing period of the vines, would be detrimental in causing scorching and defoliation. The method recommended at present is to wait until the fruit has been picked, then, just when the leaves show signs of falling, to fumigate with a fairly heavy dose of Cyanogas, using about one ounce per thousand cubic feet. This will catch the bugs before they have had a chance to go into a state of hibernation. During the winter months, in the mid-dormant period, thoroughly wash down the vine rods with emulsified cresylic acid, used at the rate of one gallon in fifty to fifty-seven gallons of water.

GLOXINIA LEAVES WITH BROWN MARKINGS.—*A. E.* The rusty appearance of the foliage of your Gloxinias is caused by a mite. The pest may be destroyed by Tobacco water, and where the plants may be conveniently dipped in the liquid this is the best method of destroying the mite. Large plants should be syringed, taking care to wet the under-surfaces of the leaves, which may be done by placing the plants on the floor on their sides.

DAFFODIL BULBS EATEN BY GRUBS.—*W. G. B.* The insect that has eaten your Daffodil bulbs is the larva of Merodon equestris, the large Narcissus fly. Two larva were present in the specimen sent. All bulbs showing similar damage should be destroyed by burning. It is recommended to soak the bulbs in luke-warm water for twenty-four to forty-eight hours with a view to causing the grubs to be forced out and drowned. The perfect fly appears in spring and early summer, and if they are numerous around your Daffodil beds, we advise you to catch as many as possible with a butterfly net.

HOLES IN IRIS RHIZOMES.—*Iris.* The holes in the Iris rhizomes have an interesting origin. The roots arise from some distance inside the rhizome and push their way through to the surface. When they die they leave a small hole with the remains of the vascular bundles present, but now in a dried-up condition. This is what has happened in the case of the specimen received. The rhizome had suffered neither from fungous nor insect attacks, but the roots had died as a result of some cultural error. Whether the plants have been allowed to become too dry or too wet it is impossible to say, but from the general appearance of the specimen, drought appears to be the responsible cause.

INSECT IN LILY POND.—*F. C.* The insects that feed on Water Lilies are many and various, including pond-snails or species of Limnaea. Poisonous chemicals cannot be used in sufficient quantity to kill them without killing the Water Lilies and gold fish. The most practical remedy is to clean the pond at intervals. Some gardeners clean their tanks and ponds once a week, and this operation need not take long if a butterfly net tied on the end of a long pole is used. Once a year most ponds are dried, or run off, usually about the end of March, and thoroughly cleansed. This would get rid of the fallen leaves of trees, and the summer cleansing at intervals would rid the pond of Algae, Duckweeds, etc. When the water is thus kept clean, the gold fish would be the better able to pick up the larvae of insects that feed on living and dead leaves. Half-dead leaves, and dead flowers of the Water Lilies should be removed.

INSECTS EATING WATER LILY LEAVES.—*F. C.* The insects are the larvae of one of the Chironomidae or Midges. Most of the larvae belonging to this family are aquatic, a well-known example being the "blood worms." Usually they feed on mud and decaying vegetation, although in this case they appear to be attacking living leaves as well. It is impossible to treat them chemically without injury to the Water Lilies and gold fish, and the only remedy would appear to be to cleanse the pond thoroughly. It is just possible that if more gold fish are added these would answer the same purpose.

MELON FRUITS FAILING.—*Hortus.* The symptoms of which you complain are usually the result of damaged roots. Melon roots may be damaged by fungi, and this is the usual cause of blemished fruits. In your case it seems probable that the chemical present in the liquid manure has been the cause of root injury, and indirectly the cause of blemished fruits.

NAMES OF PLANTS.—*J. B. P.* 1. Tritonia crocosmiaeflora; 2, Dactylis glomerata variegata; 3, Holcus lanatus variegata; 4 and 5. Erigeron macranthus varieties; 6, Hypericum species; specimen too scrappy to identify: 7, Sedum spurium; 9, Lobelia Gerardii; 10, Lathyrus sylvestris. *A. T.* Vitis rhomboidea. *Q.* 1, Iris Lamancei; 2, Trollius chinensis; 3, Salvia Silarea. *A. E. F.* 1, Platycodon grandiflorum; 2, Olearia Haastii; 3, Crypromeria japonica var. elegans.

NECTARINE FRUITS DISFIGURED.—*A. A.* The rusty appearance of the Nectarine fruits suggests an excess of atmospheric moisture. Although the Nectarine is a moisture-loving tree when in full growth, incessant syringing or the supply of too much moisture at the roots in dull, sunless weather is a mistake, as trees in cold houses are apt to make too gross growth when the foliage remains wet throughout the night. The fruits sent by you appear to have been grown under dense shade; they should have been gradually exposed to the sun, after stoning, as this would have improved the colour and flavour.

PEARS UNSATISFACTORY.—*B. J. F.* The splitting and rusty appearance of the Pear fruits is due to the presence of the fungus Venturia pirina, popularly known as Pear scab. Affected trees should be sprayed with dilute Bordeaux mixture (not more than half-strength) just when the buds commence to open; a second spraying should be given when the flowers are dropping their petals and a third when the young fruits are about the size of Peas. A further helpful measure in combating this disease is by spraying the trees, when dormant, in winter, with a solution of sulphate of iron.

PERENNIAL PEA PLANT.—*M. H.* The plant is Ononis spinosa (Spiny Rest Harrow). It is widely distributed in Britain, being most frequently met with in England, where it is found in abundance in some counties on waste places, waysides and moors. There is a white variety, occurring wild with the type, and both are attractive plants. There is also a creeping species, O. repens, but it is not so neat a garden plant as the former

POTATOS DISEASED.—*W. F. W.* The tubers are not affected with Wart disease, but Black Scab. The scab is caused by Actinomyces scabies, and results in a rough surface of broken, corky tissue. The trouble is most prevalent when suitable organic material is deficient in the soil; before planting Potatos you should add further organic matter, such as by digging in a green crop or spreading lawn mowings in the drills.

Communications Received.—C. S.—A. G.—D. C.—R. F. S.—J. E. A. G.—J. S.

NEW HORTICULTURAL INVENTIONS.

LATEST PATENT APPLICATIONS.

19,753.—Savage, J. C.—Treatment of growing plants.—August 10.

19,461.—Andersen, N.—Apparatus for tightening wire strands of fences. August 6.

19,262.—Haslam, T. P.—Lawn-mowers. August 4.

18,613.—Bodrero, B.—Preparation of sulphuro-phosphate, etc., fertilisers. July 26.

18,587.—Curtis, J. N.—Hose-pipe clips. July 26.

SPECIFICATIONS PUBLISHED.

256,352.—Barraclough, H.—Lawn mowers.

256,442.—Roberts A.—Apparatus or mechanism for operating lights on ventilators or the like of horticultural houses.

255,945.—Murray, J. L. H.—Portable heated greenhouses for use in horticulture.

255,638.—Cook, H.—Device applicable for use in supporting garden hose and similar appliances.

These particulars of New Patents of interest to readers have been selected from the official Journal of Patents, and are published by permission of the Controller of H.M. Stationery Office.

Abstract Published.

Manures. *Patent No.* 253,580.

A new method for making chemical manure has been invented and patented by Mr. E. L. Peaso of Darlington. The maure is prepared by treating a mixture of mineral or organic calcium phosphate and a porous material, such as peat powder, coke dust, sewage sludge powder, or corn cobs, with sulphuric acid or sulphur gases to obtain a mixture of calcium sulphate and free phosphoric acid, which is further treated with ammonia. Water may be present with the porous material or the acid used is diluted. According to the second Provisional Specification, an oxidizing agent such as sodium nitrate may be mixed with the porous material and phosphate when sulphur gases are used.

Printed copies of the full published specifications may be obtained from the Patent Office, 25, Southampton Buildings, London, W.C.2, at the uniform price of 1s. each.

TRADE MARKS.

THIS list of Trade Marks of interest to readers has been selected from the Official Trade Marks Journal, and is published by permission of the Controller of H.M. Stationery Office.

SPRING VALE BASIC PHOSPHATE.

465,929.—Illustration of a Turnip and the words SPRING VALE BASIC PHOSPHATE, for basic phosphate.—Stewarts and Lloyds, Ltd., 41, Oswald Street, Glasgow, and Spring Vale Furnaces, near Bilston, Staffordshire. August 18.

TORCH BRAND.

469,155.—Illustration of a seal bearing the letter A and a torch, and the words TORCH BRAND for chemical substances used for agricultural and horticultural purposes.—Allen and Hanburys, Ltd., Plough Court, 37, Lombard Street, London, E.C.3. August 18.

THEMAC

469,957.—Agricultural and horticultural machinery and parts of such machinery.—The The Metal Agencies Co., Ltd., 32, Queen Square, Bristol. August 11.

"PLOUGH" CHEMICALS.

471,049.—Illustration of a plough and the date, A.D. 1715, for chemical substances used for agricultural and horticultural purposes, but not including fertilisers and not including any goods of a like kind.—Allen and Hanburys, Ltd., Plough Court, 37, Lombard Street, London, E.C.3. August 11.

THE

Gardeners' Chronicle

No. 2071.—*SATURDAY, SEPTEMBER* 4, 1926

CONTENTS.

Aberdeen, notes from 192
Alpine garden—
  Hypericum reptans 186
  Pentstemon campanulatus ... 186
  Veronica canescens 186
Apiary notes 192
Books, notices of—
  Flowering Trees and Shrubs 193
Bulb garden—
  Bulbocodium vernum 187
  Tulips 187
Cherry pie, a monster 182
Dahlia show, the American 182
Dahlia, the 194
Economic plants in the Forbury Gardens, Reading 182
Fire at Sheffield Fruit Market 182
Flower garden ... 186
Forest fires in France 182
Fruit crops, remarks on the condition of the 193
Fruit garden—
  Late Gooseberries... 194
"Gardeners' Chronicle" seventy-five years ago 183
Hardy flower border—
  Hemerocallis ... 186
Indoor plants—
  Cestrum 188
  Nerines 188
  Rhododendron fragrantissimum ... 188
Lilium philippinense var. formosanum ... 190
Obituary—
  Aggett, W. H. ... 199
  Slocock, Walter C.... 199
Orchid notes and gleanings—
  Cattleya Warscewiczii ... 187
  Platyclinis filiformis 187
Rose garden—
  Some Roses of merit 189
Saffron town, the ... 182
Satyrium coriifolium... 182
Scottish Potato and Sugar Beet crops ... 183
Societies—
  Bute Horticultural 199
  Dundee Horticultural 199
  Highland Horticultural 198
  National Rose ... 197
  Sandy Flower Show 198
  Southport Floral Fete 195
Sugar Beet industry, British 183
Testudinaria Elephantipes 194
Thays, Don Carlos L.... 182
Trees and shrubs—
  Trees at Hillsborough Castle ... 188
Vegetable garden—
  Potato yields ... 194
Vegetative propagation 181
Vines, renovating ... 194
Week's work, the ... 184
Wisley, notes from ... 191

ILLUSTRATIONS.

Banks of Hardy Flowers exhibited by Messrs. Bees, at Southport... 197
Collection of Hardy Flowers exhibited by Messrs. M. Prichard and Son, at Southport 189
Decorative Fruit Table exhibited by the Duke of Newcastle, at Southport 198
Groups of Foliage Plants exhibited by Mr. W. E. Holmes and Messrs. J. Cypher and Sons, at Southport 195
Lilium philippinense var. formosanum ... 190, 191
Montbretia E. A. Bowles 183
Platyclinis filiformis, a specimen plant of 187
Thays, Don Carlos L., portrait of 182
Vegetables exhibited by Hon. Vicary Gibbs, at Southport 185

Supplement Plate
Cestrum Newellii

Average Mean Temperature for the ensuing week deduced from observations during the last fifty years at Greenwich 59·5.

Actual Temperature—

The Gardeners' Chronicle Office, 5, Tavistock Street, Covent Garden, London, Wednesday, September 1, 10 a.m. Bar. 30·2. Temp. 67°. Weather, Dull.

Vegetative Propagation. In a discussion on "Vegetative Propagation" at a meeting of the Botanical Section of the British Association, Oxford, 1926, Professor Priestley emphasised the fact that although the perpetuation of a wide range of horticultural plants is possible by vegetative propagation methods, and although such methods are in constant use in horticultural practice, yet the whole procedure is based upon empirical foundations. Success in the past has been obtained solely as the result of a long process of trial and error. So little is known of the principles underlying vegetative regeneration that it is so far impossible to make generalisations. The process of the development of a complete plant from a piece of stem, for example, involves a readjustment of balance by the production of adventitious roots, and a very close relationship exists between the growth of such roots and the growth of the parent stem. Successful propagation depends upon the creation and maintenance of a state of balance between root-and shoot-growth. It is therefore necessary to investigate the anatomical and physiological facts concerning stem-growth and root-growth in relation to each other. The mode of growth, nutrition conditions and even the origin of roots differ from those of shoots. The apical growing point of a stem is situated at the extreme tip of that organ and the formation of new cells takes place at the surface, whilst the root-growing point is embedded in the tissue of the tip of the root and grows more rapidly on its inner surface. This and other differences in the structure and composition of the root and shoot result in differences in their modes of nutrition. The outer layers of the tissues of roots are not well supplied with nutrient substances owing to the presence of a barrier which restricts the outward spread of such materials from the central woody cylinder, but no such restriction is normally present in the stem. These factors probably explain why a root develops new roots from its inner tissues, whilst a stem develops new stems from its outer tissues. When growth occurs in a cutting, adventitious new shoots, as distinct from those developed from existing buds, always arise from the phellogen, whilst new roots arise from the vascular cambium proper, and not from any other tissue. A close study of the activities of this layer is therefore necessary. Cambial activity in a stem is known to be closely connected with the growth of new shoots from that stem, and Professor Priestley considered that the principles involved in the process of vegetative propagation will be elucidated only when further knowledge of this relationship has been obtained. Professor Neilson Jones pleaded for the recognition of the bearing which the phenomena of correlation may have upon the problem, and elaborated some aspects of Child's views of metabolic gradients in relation to the establishment of balance which vegetative propagation involves. Dr. Knight presented some results which had been obtained in trials with cuttings of fruit tree stocks, designed to investigate the effect of both external and internal conditions on the rooting process. It was pointed out that for practical purposes it was not sufficient merely to obtain a rooted cutting of a variety, but that the value of the method to the horticulturist depends in the first instance upon obtaining a large percentage of cuttings rooted in a short time, without great expense. Figures were given which showed that callus production was favoured by very moist conditions, whereas root development required different conditions, including good aeration. Concerning the internal conditions of nutrition, previous work had shown that when a cutting was relatively rich in carbohydrate substances and poor in nitrogen, root production was greater than when the reverse condition prevailed. Attempts to increase the carbohydrate content of cuttings by the introduction of cane sugar failed to increase rooting materially, and this was apparently due to the fact that most of the sugar so introduced passed at once to the leaves and was lost to the plant when leaf fall occurred. The greatest success with softwood cuttings was obtained when the cuttings were made from stems which had ceased active growth, and the earlier in the season such cuttings could be planted the higher was the percentage of individuals which rooted. Considerable differences were shown to exist in the response of different varieties to conditions and this excludes the possibility of any but the broadest generalisations. Softwood cuttings made from stems, the bases of which were etiolated, showed a much higher percentage rooting than normal green cuttings and, moreover, the type of rooting was different in the two cases. The normal green cuttings root through the callus which is formed at the basal cut, and the roots are apparently formed in response to the wound stimulus. Cuttings with etiolated bases root all along the etiolated portion of the stem and not from the base only. It is doubtful whether this type of rooting can be regarded as true regeneration. Dr. W. Graham quoted Bayley Balfour's opinion that any species can be propagated vegetatively provided that suitable material is selected and a suitable environment provided. He proceeded to show a series of slides demonstrating the origin of adventitious shoots and roots from different portions of plants. Several examples were included in which Dr. Graham considered that the young shoot meristems arose from the vascular cambium proper. The case of Gardenia was quoted in which a plant arising from a cutting taken from the leading shoot maintains an upright and vigorously vegetative habit and does not flower for many years. On the other hand, if a cutting is taken from a weaker lateral shoot, the resulting plant is bushy and flowers so early as its second year, although eventually a sucker arises and this assumes the upright habit, becoming the main stem to the exclusion of the original bushy plant. Dr. Graham also demonstrated the effect of planting cuttings upside down. In this case, the thickening of the parent stem occurs mainly towards the morphologically basal end, *i.e.*, in the upper portion of the cutting as planted. In the ensuing discussion Professor Priestley expressed the opinion that Dr. Graham was mistaken in thinking that his slides showed shoot initials arising from the vascular cambium. On the contrary their origin was visibly in the phellogen. Dr. Graham dissented, but time did not permit of full discussion of this point. Professor Priestley, in considering the orientation of the thickening, *i.e.*, cambial activity, of the inverted cutting, further emphasised the importance of the relation between shoot growth, cambial activity and root production. He mentioned that Dr. Knight and himself had independently obtained evidence showing the close association between new shoot growth and the localisation of cambial activity in the parent stem. Dr. Malins Smith asked if any of the speakers had obtained evidence that a high carbohydrate/nitrogen ratio was a condition favouring root production, since Miss E. Philip Smith working with Clematis had concluded that the improved rooting obtained was the result of a decrease in the carbohydrate/nitrogen ratio. Dr. Knight replied that he had obtained no direct evidence in his own work, but several investigations on Tomato had been published, all of which showed that rooting was best when the ratio was high. This closed the discussion which had served to show that in vegetative propagation considerable importance attaches to the anatomy and physiology of the cambial region, and that in view of the extremely variable response exhibited by different plants, general principles can be laid down only after further investigation of these factors.

The Holland (Lincs.) Potato Show.—A comprehensive schedule has been prepared for the Holland (Lincs.) County Potato Show, which will be opened at Boston, on Thursday, October 28 next, by the Rt. Hon. Lord Bledisloe, K.B.E., the Parliamentary Secretary to the Ministry of Agriculture. There are handsome challenge cups and liberal money prizes for collections of seed and of ware tubers of various types. These are distributed in the different sections, so that the small grower or allotment holder as well as the large trade cultivator are well catered for. In addition to the classes for collections of Potatos there are sixteen classes, open only to the county of Lincoln, for single dishes of specified varieties. For the information and convenience of exhibitors, the schedule contains lists of immune and non-immune varieties.

Satyrium coriifolium.—The Secretary of the Royal Horticultural Society asks us to give publicity to the fact that the plant which received an Award of Merit on August 10, under the name of Satyrium aureum is really a form of Satyrium coriifolium and should be called by the latter name. We referred to the plant under its correct name in our report of the R.H.S. show on page 137.

Monster Cherry Pie.—A *Reuter* message states that an immense Cherry Pie has been presented to the President of the United States of America and Mrs. Coolidge by the Cherry growers of the Grand Traverse region of Michigan. The pie, which measured thirty inches in diameter, four inches in depth, and contained five thousand Cherries, was baked in Traverse City, Michigan, and brought to Paul Smith's, New York, in an automobile by Mr. Hugh Burkhart, one of the chief growers of the Grand Traverse region. The car was held up by the police in Canada for "speeding," but was "permitted to proceed when they explained their mission and urged considerations of international comity."

Further Forest Fires in France.—The *Daily Telegraph* Paris correspondent reports that the fire which broke out in the Pine wood at Martillac early last week had a few days later assumed serious proportions. So soon as arrangements had been made to fight this fire, news arrived of an outbreak at Leognan, seven miles away, and fires were raging on an area over seven miles long by three miles deep, and soon nearly eight thousand acres were burnt bare. The villagers of the southern part of the Gironde Department were called by tocsin to fight the fire and troops were sent to assist, while aeroplane observers kept the authorities in touch with any changes in the general situation.

Castor Oil Cultivation in North Africa.—Efforts are being made by the French authorities to induce agriculturists in North Africa, and particularly in Algiers and Morocco, to restrict their areas of the Grape Vine in favour of the Castor-oil plant (Ricinus communis). At present France imports some 360,000 lbs. of Castor-oil from India, and it is pointed out that, in view of its increasing use as a lubricant for aeroplane and other engines, the demand is certain to increase, so that there would be a ready market in France for all the castor oil North Africa could produce. As an additional inducement to its culture, mention is made of a sort of silk-worm, which spins five cocoons annually instead of one, as with the legitimate Bombyx, and thrives on the leaves of the Castor-oil shrub. Although the silk this insect produces is of somewhat inferior quality, it is claimed that its greater production would make it very profitable.

Award of the George Robert White Medal.—The Massachusetts Horticultural Society has awarded the "White" Medal to Mr. Pierre S. duPont, of Wilmington, Delaware, in recognition of "his remarkable work in popularising horticulture, in extending a love for flowers, and for the establishment of a great winter garden at Longwood, his country home near Kennett Square, Pennsylvania." The winter garden comprises six acres under glass, heated by two large automatic oil burners, and contains a varied collection of plants of all kinds. It is opened to the public every day from 11 a.m. until 5 p.m., with the exception of the second and fourth Sundays in each month. So many as five to six thousand persons often pass through the grounds in one day, and on Saturdays and Sundays a small admission fee is charged, the money being given to the hospitals of West Chester and Wilmington. *Horticulture*, U.S.A., for August 15, contains a portrait of Mr. duPont and views of the winter garden and pleasure grounds at Kennett Square.

Don Carlos L. Thays.—The beautiful Botanical Gardens of the city of Buenos Aires were founded in the year 1892 by Señor Carlos Thays, who was responsible for the choice of its position, and was fully aware that in regard to soil and climate the site was one of the best it was possible to choose. As a result of years of correspondence and interchange of species between the various botanic gardens of the world, the Botanical Gardens at Buenos Aires now contain no fewer than 7,000 species. The work so ably founded by Senor Thays was continued from 1913 until 1917 under the direction of Don Benito J. Carrasco and since then has been under the care of Don Carlos L. Thays, son of the founder and first director, and himself a well known writer on agricultural matters. Don Carlos L. Theys is the Director of Public Ways, which includes the care of the Botanical Gardens. Before occupying his present position he was Manager of Plantations, Parks and Gardens, under the Ministry of Agriculture, and Manager of the Agricultural Investigations and Superintendent of the Experimental Farm attached to the Ministry. He is Secretary of the Argentine Forestal Society, which undertakes the protection and distribution of trees, and also the annual celebration of "The Day of the Tree," which is observed throughout the Argentine Republic, Don Thays has also been Director of the Records of the Argentine Forestal Society. Not only is he the Director of the Public Ways and of the Botanical Gardens, but the care of the public open spaces, amounting to 1,400 hectares, comes under his department, while numerous private undertakings are being carried out by him, notably the Coastal Avenue, the Municipal Bathing Beach and the altering of numerous public squares, all of which will add greatly to the beauty of the capital of the Argentine. In addition to these many arduous duties, M. Thays also undertakes a large part of the education of young men in the Municipal School of Gardens, which is attached to the Botanical Gardens, the object of which is to prepare the future personnel for the administration and horticultural care of public ways and gardens in Buenos Aires.

DON CARLOS L. THAYS.

The Genera of South African Flowering Plants.—Students of South African botany will welcome the coming publication of a convenient handbook by E. P. Phillips, M.A., D.Sc., F.R.S.,S.Afr., Senior Botanist, Division of Botany, on the South African Flowering plants which is now in the printer's hands. Since the year 1868, when the late Sir Joseph Hooker published the second edition of Harvey's *Genera of South African Plants*, the exploration of the South African flora has made tremendous strides, especially in Natal, the Transvaal, and southwest Africa, which at that period were almost *terrae incognitae*, but even in the Cape Province many new genera have been found, and others have become better known or have been remodelled. The book, which will consist of between 500 and 600 pages of description and keys, will be sold at £1 per copy. Orders may be placed with the Government Printer, Pretoria, or the Superintendent, Government Stationery Office, Capetown.

Fire at Sheffield Fruit Market.—At mid-day, Wednesday, August 25, an alarming fire broke out in the Castlefolds Fruit Market, and caused damage to the extent of about £3,000. The fire started amongst the packing cases and baskets of fruit in the stores of Messrs. J. C. Lucas, Ltd., in Dixon Lane, and spread so quickly that in a few moments the whole place was alight. Mr. Eric Lucas and several of his men who were on the first floor escaped by jumping through a window about ten feet from the ground. Adjoining stalls caught fire almost immediately and the telephone wires were burnt before the fire brigade could be called. When the firemen arrived they found that the conflagration had assumed serious proportions. The glass roof of the market has a wooden frame and this collapsed under the great heat and volume of water thrown upon it, and many of the market people had close escapes from injuries from the falling glass.

The American Dahlia Show.—It is anticipated that trade growers will exhibit largely at the special Sesquicentennial Dahlia Show, which is to be held at Philadelphia on September 14, 15 and 16 next. While a number of special classes have been arranged for commercial growers there are many others open only to owners of private gardens and garden clubs. A Gold Medal is offered for the most artistic display of Dahlias arranged on a space measuring one hundred square feet.

The Saffron Town.—In his intensely interesting articles entitled "Wanderings in Roman Britain," published in *The Daily Mail*, Mr. Arthur Weigall refers to the fact that Saffron Walden derives its name from the ancient industry of the cultivation of Saffron, obtained from Crocus sativus, the Crocus of the ancient world, and introduced to Britain by the Romans. It is supposed to be the Karkom of the Song of Solomon, and the Latinised form "Crocus" must be one of the oldest flower-names in common use. The drug Saffron, renowned for its medicinal powers, perfume and flavour, is obtained from the orange stigmata. Oculists of Rome used it as a salve for sore eyes, and in the seventeenth century, when the industry flourished in Essex, Saffron was in very high repute. It is now no longer used medicinally and retains its place in the pharmacopaeia solely for its value as a colouring agent. It is still used extensively in the west of England, however, for flavouring cakes and dyeing light fabrics.

Economic Plants in the Forbury Gardens, Reading.—Reading owes much to Dr. Jamieson B. Hurry, the enthusiastic expert in economic botany. At the present time, in the Forbury Public Gardens, which are adjacent to the ruins of the historic abbey, an interesting collection of economic plants, mainly if not entirely the gift of Dr. Hurry, is a centre of great interest to the townspeople, the students at the University, and even to the school children. Arranged in four beds around the memorial cross to King Henry I, who was buried in these adjacent gardens, the plants are divided into four separate classes: (1) food plants, (2) fibre plants, (3) dye plants, (4) medicinal plants. Included in the first group are Tea, Sugar Cane, Arrowroot, Soya Bean, Banana, etc. In the second group are various kinds of Hemp, New Zealand Flax, common Flax, the Japanese fibre-producing Banana, and the Ramie fibre plant. Of dye plants there are Woad, Annatto, Indigo, Poke Weed, Turmeric and others, and in the medicinal plant group there are the Opium Poppy, Eucalyptus, Aloe, Jalap, Liquorice, Castor Oil, and Cardamons. All the plants are legibly labelled with botanical and English names, their Natural Order, economic purpose and native habitat, the whole display making an interesting and educational feature of the gardens which are otherwise well-furnished with gay and pleasing bedding and border plants. The example of the Forbury Gardens might with advantage be emulated by public gardens throughout the country, for it is well that the general public should be afforded all possible opportunity of gaining some knowledge of the vast importance of the part which plants fulfil in administering to the well-being, comfort and pleasure of the human race.

British Sugar Beet Industry.—As required by the British Sugar (Subsidy) Act, 1925, the balance sheets of eight companies engaged in the manufacture of sugar or molasses from home-grown Beet have been published by the Ministry of Agriculture. Five of the companies show profits and three show losses on the year's working. The factory at Spalding, which was completed in the early part of the year, was unable to deal with any of last season's Beet owing to water difficulties. As these have now been overcome the factory will begin operations in October.

The Japanese Beetle in America.—*The Florists' Exchange* states that "at present more than 550 persons are engaged as governmental agents, inspectors, etc., in the fight against the Japanese beetle," and asks "what proportion of their total efforts is being expended in enforcing quarantine regulations, and what proportion in perfecting methods of destroying the beetle and rendering plants resistant to its attack." It seems that the infestation is greatest in Pennsylvania, Delaware and New Jersey, but is spreading rapidly.

Scottish Potato and Sugar Beet Crops.—According to the report of the Board of Agriculture for Scotland, Potatos have made good progress during the past month, and the crop is now looking well in most cases. Blight is reported from north and east Perth, and in a few fields in central and south-east Perth disease is indicated by the blackening of the stems. Elsewhere, however, the crop is healthy, and from more than half of the districts the estimates indicate that the yield will be more or less above the average. In Fife, Clackmannan, Kinross, Central Argyll, Stirling and Wigtown the yield is expected to be about fifteen per cent. above the average. The Sugar Beet crop is reported to be healthy and vigorous, the warmth and intermittent rains having been favourable for the development of the roots. Few reports of an unfavourable nature have been received, for in Central Perth and south Ayr the prospects are not favourable, while in north-east Forfar the crop on a few farms is reported to be almost a failure. Weeds are causing considerable trouble in a few districts, while in Berwick the plants have begun to run to seed.

Appointments for the Ensuing Week.—SUNDAY, SEPTEMBER 5: Wakefield and North of England Tulip Society's meeting. MONDAY, SEPTEMBER 6: Romsey and District Gardeners' Association's meeting; National Chrysanthemum Society's Floral Committee meeting at R.H.S. Hall. TUESDAY, SEPTEMBER 7: Royal Horticultural Society's Committees meet. WEDNESDAY, SEPTEMBER 8; Royal Caledonian Horticultural Society's show (two days); National Dahlia Society's show. FRIDAY, SEPTEMBER 10: National Rose Society's Autumn Show (two days); Royal Horticultural Society of Ireland meeting. SATURDAY, SEPTEMBER 11: Avonbridge Flower Show.

"Gardeners' Chronicle" Seventy-five Years Ago.—*The Raspberry Case.*—Having read the article on the subject of seed discovered in opening a barrow or tumulus in this neighbourhood (Wareham) with considerable interest, I hasten to forward my recollections of the circumstance, which may perhaps satisfy you that no imposition was practised by the gentleman who supplied you with the account at the time of the discovery. A barrow was, at the period named, opened on Ridgeway Hill, near the very ancient British hill fort, Maiden Castle, and seeds of the description named, found, some of which I saw at the time; and I then, as I do still, place implicit faith upon the account which my friend gave me of the discovery. Some time afterwards, I was informed that the experiment of trying whether the seed would vegetate, was conducted with great care, and the result had been that of producing the common Blackberry plant, upon which, in all probability, the warrior had breakfasted, and, ere the stomach had had power to act upon the seed, been slain on some neighbouring battle field. As connected with the present subject, I may perhaps be permitted to remark, that no part of England is more rich in relics of our aboriginal ancestry than Dorset, and the counties immediately surrounding it; but, it is a source of daily regret that the hand of the improver (?) should so ruthlessly destroy that which the withering hand of time has scarcely altered through a period of more than two thousand years. In the neighbouring Isle of Purbeck, there are parts of Druidical circles scattered about, some of which have, in my own memory, been split into fragments and employed to construct a drain or a bye-road across the heath, within a mile of the very ancient British fastness from which I now address you, Wareham, whose earthen ramparts, though so unique, are shamefully and wilfully destroyed; a barrow was opened not long since, solely for the purpose of using the materials to repair the turnpike roads—millions of loads of excellent gravel lying at the same moment nearer at hand, for the trouble of digging it. In this barrow upwards of thirty urns full of calcined bones and ashes were deposited, and most of them recklessly destroyed. *Chas. Groves, Wareham, Dorset. Gard. Chron., September 6, 1851.*

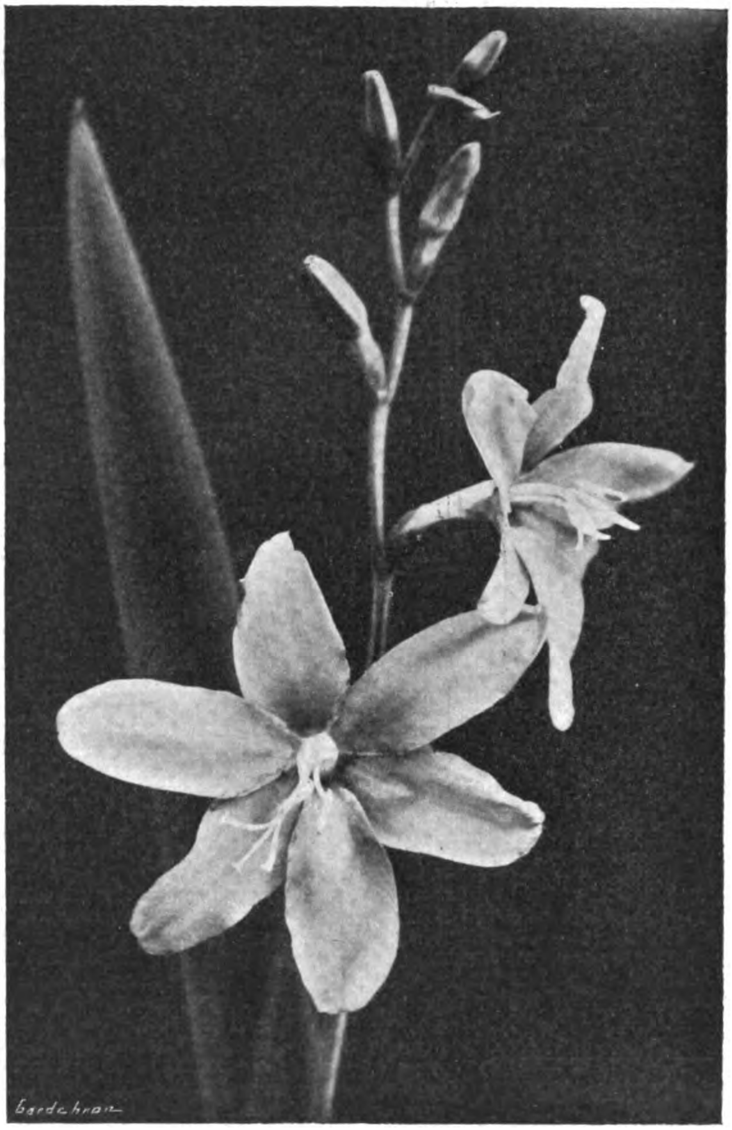


FIG. 89.—MONTBRETIA E. A. BOWLES.

R.H.S. Award of Merit, August 24. Flowers coloured rose-cardinal with pale crimson zone and yellow throat.
Shown by the Hon. Mrs. Montagu. (see p. 177).

The Week's Work.

THE ORCHID HOUSES.

By J. Collier, Gardener to Sir Jeremiah Colman, Bart., Gatton Park, Reigate, Surrey.

Seasonable Notes.—With the arrival of September shorter days and less sunshine will obtain. It is impossible to forcast what the weather is likely to be, but should it continue damp and unsettled, as it has been during the greater part of August, the management of the Orchid houses should be modified as regards atmospheric moisture, it being a mistake to maintain the same moist conditions as in warm, dry weather, and more especially should this be observed in the case of the Cattleya, intermediate and cool houses. Ample atmospheric moisture will be required in order to counteract the drying effects of the fire-heat necessary in maintaining a suitable temperature in the East Indian house. The requirements of the occupants of the intermediate and cool houses will be served by thoroughly damping the floor, etc., each morning during dull weather, and by merely sprinkling the paths and stages in the afternoons.

Removal of Shading Materials.—The deficiency in sunlight from shortening days may be compensated to some extent by removing the permanent shading, and by reducing the intervals of letting down the roller blinds. In all cases the reduction of shade should be gradual, the object being to cause the foliage to become hardened, so that little shading will be necessary by the end of the present month. The plants should be exposed to all the light possible without causing damage by scorching.

Ventilating the Houses.—Ventilation is always an important factor in Orchid culture. Air should be admitted on all favourable occasions, and a little air should be admitted throughout warm nights. It is a bad policy to try to economise fuel by closing the ventilators early and keeping them shut until morning, as this oftimes causes spot in the foliage. The ventilation of the Odontoglossum house should be done with great care; the top ventilators may be opened slightly to admit the autumn dews that are very beneficial to these plants. Sudden falls in the outside temperatures may now be expected; the furnaces should be kept clean and ready for supplying extra heat when it is required. Care should be taken that at no time should the pipes be allowed to become excessively hot, as this is harmful to the plants, while insect pests will increase rapidly under hot, dry conditions.

THE KITCHEN GARDEN.

By F. Streeter, Gardener to Lord Leconfield, Petworth Park, Petworth, Sussex.

Brussels Sprouts.—This valuable crop is growing very fast and in some cases the plants will require supporting by stakes and a strong tie. Any decayed leaves should be removed and the ground hoed and raked whenever possible without damaging the strong-growing foliage. A liberal dusting of soot will prove beneficial to the plants and not only improve their colour but help in warding off slugs, etc., which sometimes get into the sprouts when they are loose-hearted.

Cardoons.—So soon as this crop is sufficiently forward to commence blanching, the bottom leaves should be removed carefully and the plants given a thorough soaking with water, then draw the remaining leaves together, securing them with a piece of wide raffia. There is a difference of opinion as to the best method of blanching, but for ordinary kitchen purposes I prefer the soil drawn firmly up to the stems; the great difficulty is to keep them small enough. To obtain Cardoons for exhibition purposes, bands of hay bound closely around the stems are best. This crop will also benefit by liberal dressings of soot.

Cauliflowers.—Make another sowing of about three varieties of Cauliflowers in a cold frame to obtain plants that will withstand the winter. Sow thinly and evenly on poor soil which has been dressed with soot and wood-ash. The lights are best off and a piece of netting spread over the top of the frame to keep the seeds safe from birds. Endeavour to grow the plants sturdily and get them into a suitable condition for withstanding inclement weather of winter.

Onions.—As the main crop Onions become ready lift the crop carefully and thoroughly ripen the bulbs by placing them in hurdles, leaving them in the sun by day and in an open shed at night safe from rains and dews. Turn them each day, and when perfectly fit store them in an airy shed or room ready for roping on wet days as this operation will find work for some members of the staff when outdoor work is at a standstill.

HARDY FRUIT GARDEN.

By W. Auton, Gardener to Viscount Elveden, Pyrford Court, Woking, Surrey.

Peaches and Nectarines.—Trees of early varieties from which the fruits have been gathered should now be pruned. This consists simply in removing those growths which have borne fruit and laying in the shoots retained at the base for the purpose. If this work is done now very little winter pruning will be necessary, and the current year's wood will have a much better chance of ripening their buds for next year's crop. Frequent syringings may again be practised to maintain cleanliness of foliage, and care should be taken that the borders are kept sufficiently moist to keep the trees vigorous. The fruits of late varieties, which are still swelling, may be assisted by applications of dilute liquid manure.

Planting.—Where the planting of young fruit trees is contemplated during the present season preparations for carrying out the work should now be made. The choice of varieties is an important point and one which needs much consideration. The number of varieties is so great in the case of Apples that there is no difficulty in meeting the needs of every taste and all conditions, but the most valuable aid in determining which are the best to grow is a study of those which succeed best in the district concerned. There is usually considerable demand for the more popular varieties, and orders should be placed early to ensure delivery so soon as the lifting of the trees begins. In selecting the site for an orchard, an open position on high ground is to be preferred, and a shelter belt on the north and east sides is of great assistance. In such a position the natural drainage will probably be all that can be desired, and there will be no need to resort to artificial drainage, but perfect drainage is an essential factor in fruit tree culture and should be ensured. If the site has been chosen previously and the ground cultivated in preparation for fruit trees, it will probably have been manured, ploughed and subsoiled in the spring, and may now be carrying a crop of Potatos. In this case the soil will be in excellent condition when the crop is lifted, and the holes may be prepared and stakes put into position as time permits, so that planting may be quickly done so soon as the trees are obtainable. For planting on a large scale, this is an excellent method of preparing the ground for fruit trees, as the trenching of large areas in these days of restricted labour is well-nigh impossible, and it is a great mistake to plant fruit trees on shallowly-dug ground. If the site is grass land and it is not desired to remove all the grass, holes of at least six feet in diameter should be prepared, and this area should be kept cultivated until the trees are well established.

FRUITS UNDER GLASS.

By T. Pateman, Gardener to Sir Charles Nall-Cain, Brocket Hall, Hertfordshire.

Successional Vines.—Vines that were started into growth early in the year will soon be cleared of their bunches, but the cultivation of the vines will not finish with the harvesting of the fruits and it will be necessary to give them every possible attention if good Grapes are to be produced next season. Watering and syringing of the vines will need attention, and the grower should endeavour to obtain well-ripened growth. The wood of vigorous young vines may require a good deal of ripening and the vinery in which they are growing should be kept a little warmer by the use of fire-heat; at the same time, it is necessary to admit air by keeping the top and bottom ventilators open both night and day, as nothing will favour the ripening of the growths more than sun-heat and plenty of fresh air. If the vines are old and not over vigorous they will, in all probability, mature their wood more easily, but ventilation should be liberal whenever the outside conditions will allow. Late vines, with the Grapes still hanging need, if the weather proves hot, a slight shade; this is best obtained by a double thickness of fish netting laid over the roof of the house to break the sun's rays and at the same time admit a certain amount of light. White Grapes need all the sunlight possible to develop the rich amber colour that points to perfect finish, but if it is desired to keep them hanging for as long as possible, a little shade will be necessary to prevent them from shrinking, and this is best afforded by placing sheets of tissue paper over the bunches and making them secure by tying each corner to the lateral growth.

Late Grapes.—It is essential that the berries should be well finished by the end of the present month and to this end admit plenty of fresh air whenever the outside conditions are favourable. It is not necessary to use fire-heat on bright, sunny days, but a little extra warmth is desirable during sunless weather to counteract excessive dampness at night. The borders should be kept well supplied with liquid manure; failing this use vine manure. Soot water is very beneficial to the roots at this stage of growth and will help considerably to develop a beautiful bloom on black Grapes. Watering should be done as early as possible in the morning in order that the atmosphere may become fairly dry by evening. Keep all lateral growths removed so that the growths will not be crowded and prevent the light entering freely.

PLANTS UNDER GLASS.

By John Coutts, Assistant Curator, Royal Botanic Gardens, Kew.

Cinerarias.—These plants should have attention as regards repotting. From a sowing made during September useful plants for succeeding the earlier flowering batches will be obtained. In preparing the potting compost, leaf-soil, unless the loam is very heavy, should not be added. By using loam alone, with sufficient sand to ensure the free passage of water, the growth of the plants will be firmer and sturdier and less liable to flag during bright sunshine. Cinerarias enjoy cool, moist conditions, with plenty of air, and the house in which they are grown should be fumigated at regular intervals to check green fly.

Lifting Plants for Wintering.—Where Bouvardias, Solanums and Salvias have been planted out for the summer, preparations should now be made for lifting them; some ten days before lifting them, the roots should be cut around with a spade, afterwards giving the soil a thorough soaking. On the afternoon of the day previous to lifting them they should be well watered, and if prepared in this way they will experience very little check when lifted and placed in suitable sized pots, provided they are well watered and kept close and shaded for a few days.

Antirrhinums.—Well-grown Antirrhinums in pots are very useful for conservatory decoration during the spring. To raise plants for this purpose seeds should be sown in a cold frame about the beginning of September, and when fit to handle the seedlings should be pricked off, three or four together, into small pots, as best results are obtained by growing several plants in a pot. Subsequent cultural details consist in potting the plants on as they require it and growing them in perfectly cool conditions at all times.

Calceolarias.—Plants of herbaceous Calceolarias raised from seeds sown last month should now be ready for transference to three-inch pots. Use a rich compost, adding to it some dried cow dung or old Mushroom-bed manure. The plants should be grown in perfectly cool conditions at all times, and they enjoy moist atmospheric conditions. Cuttings of the shrubby section should now be secured; they include such useful species and varieties as C. integrifolia, C. angustifolia, C. Clibranii, C. Burbidgei, C. Allardii, C. amplexicaulis and C. Banksii. Cuttings of all these Calceolarias root readily in a close case in a cool house, and, like the herbaceous varieties, enjoy perfectly cool conditions. Young plants of C. integrifolia, C. Burbidgei and C. Clibrani that have been used for decorating the plant stages this season, if potted on, will make fine specimens for furnishing beds in the conservatory next year.

THE FLOWER GARDEN.

By F. C. Puddle, Gardener to Lord Aberconway,
Bodnant, Taly-Cafn, North Wales.

Violas.—The recent rains have greatly favoured the growths of Violas, and the present is a good time to commence the propagation of named varieties by means of cuttings, for suitable young growths at the base of the plants are becoming plentiful. The cuttings should be inserted in a sandy compost, in boxes, pans, or in beds made in cold frames. The frames may be lifted off the early batches of cuttings so soon as they have rooted, as Violas are perfectly hardy, but cuttings inserted at the beginning of next month are better left in the frames for the winter. Where frame room is limited, Viola cuttings may be inserted in beds made in a shaded position out-of-doors, but it is essential that these cuttings be inserted in sufficient time to become well rooted before hard weather sets in otherwise there may be a great mortality through the cuttings being lifted by frosts. Violas and Pansies may be easily raised from seeds, which, if sown in cold frames at the present time, will provide good plants for flowering next season.

Propagating Dwarf Azaleas.—The beautiful Kurume and other Japanese Azaleas may be propagated by cuttings inserted during the present month. The frame should be placed in a sunny position, preferably under the wall of a greenhouse, and be partially filled with a mixture of three parts sand and one part leaf-mould. Cuttings of the current season's growth should be taken with a heel, if possible, and inserted firmly in the bed. The frame should be kept quite close, and on fine days the cuttings may be sprinkled with water by the use of a fine-rosed can. The frame should be shaded slightly during sunny weather until about the second week in October after which time the cuttings will be benefited by full exposure to the sun. Keep the frame comparatively close until spring, when the rooted cuttings will be ready for transference to beds of richer compost.

Rhododendron Cuttings.—The Lapponicum series of Rhododendrons, which include the dwarf-growing R. verruculosum, R. rupicolum, R. intricatum, R. nigro-punctatum, R. parvifolium, R. chryseum, etc., may be propagated by means of cuttings inserted as advised for Azaleas. These dwarf alpine Rhododendrons are a great acquisition to gardens, and they are undoubtedly the rock-garden shrubs of the future. The colour range of the Lapponicum series is generally restricted to shades of lavender, purple, magenta and yellow; but when the more recently introduced dwarf species of the Sanguineum, Haematodes and Forrestii groups become more plentiful, owners of small gardens will be able to enjoy practically the whole range of colourings in Rhododendrons on bushes of very modest dimensions.

Gentiana acaulis.—Masses of this lovely Gentian should not be allowed to become unduly crowded, or their flowering will be unsatisfactory. The present is a suitable time to lift, divide and replant them. Although a charming subject for the rock garden, Gentiana acaulis is perhaps most effective when used as an edging to a sunny border and this method of growing it is worthy of extension to the many gardens where it is only represented by a small patch, giving no idea of its superb beauty. Gentiana acaulis is not so fastidious as is generally imagined, provided that its few wants are supplied, and these are: exposure to sunshine, lime in the soil, efficient drainage and frequent top-dressings. The soil should be dug deeply and enriched with a liberal amount of leaf-mould or some other form of humus. If mortar rubble is added it will be an advantage and will assist in providing drainage, but it should not be considered an adequate means of rectifying a deficiency of lime in the soil, for, being practically insoluble, it is only by direct contact that the roots are able to assimilate the lime contained in it. In lime-free soils a more ready means of supplying lime must be found, and this may be provided by the addition of carbonate of lime. After preparation, the soil should be made firm, and the Gentians planted in small clumps, each consisting of about six growths, at a distance of three to four inches apart. If three rows of plants are included they will soon meet and form a very neat and pleasing border.

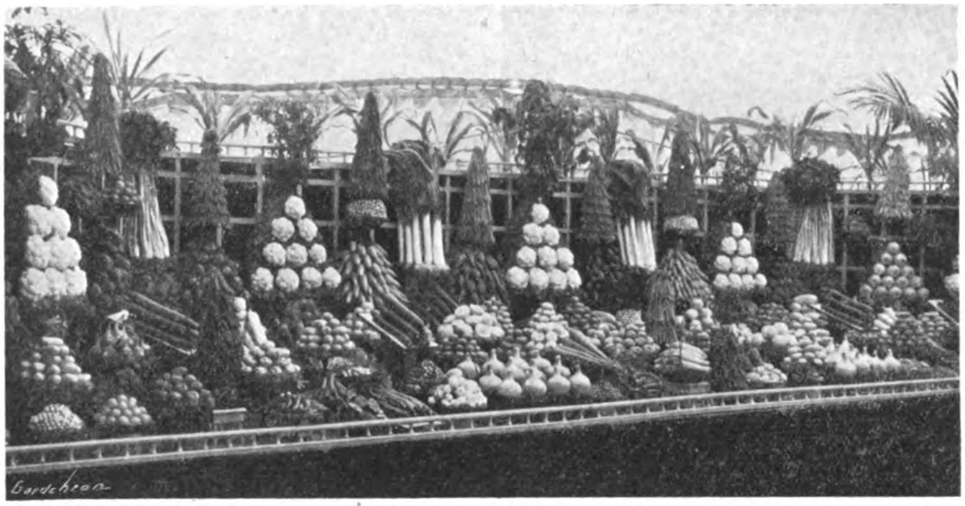


FIG. 90.—SOUTHPORT SHOW: GOLD MEDAL EXHIBIT OF VEGETABLES SHOWN BY THE HON. VICARY GIBBS (GR. MR. E. BECKETT).
(see p. 178.)

FOR NORTHERN GARDENERS.

By A. T. Harrison, Gardener to the Marquis of Ailsa, Culzean Castle, Maybole, Ayrshire.

Cabbages.—The main planting of Cabbages raised from seeds sown in July should now be made. Ground that has been cropped with Potatos is generally in good condition without the addition of manure, and suitable for Cabbages, as the aim of the grower should be to produce short-jointed, sturdy plants, capable of withstanding the winter. For this reason also the ground should be made quite firm by treading, and when the plants are once more erect and growing, the surface soil should be kept constantly hoed to aerate it and allow the rains to pass through speedily. The early, dwarf varieties, such as April and Harbinger, may be planted about fifteen inches apart each way, as these quick-hearting sorts do not produce large leaves but the stronger-growing varieties, which include Flower of Spring and Early Gem require a minimum of eighteen inches apart. Later plantings may be made as ground becomes available and according to requirements, but a fortnight gained at this time by early planting ensures earlier crops next year.

Peaches and Nectarines.—So soon as the crops are gathered, Peaches and Nectarine trees should receive attention, both as regards cleansing them from insects and watering and feeding the roots. First give the roots a good soaking with clear water, then apply liquid manure or a top-dressing of Le Fruitier or Thomson's manure, followed by a copious watering. Trees that have carried heavy crops will respond in a marked manner to this feeding by plumping up their fruit buds. The houses should be fully ventilated night and day to ensure the thorough ripening of the young wood, and where the shoots are crowded, some of the older branches should be cut out. In former years the Peaches and Nectarines in these gardens were always badly infested by attacks of red spider just as the fruits were approaching the ripening stage, but this season precautions were taken to spray the trees thoroughly with Bentley's Spidacide during July, and, so far, not a red spider has been seen, and the foliage is healthy and green.

Chrysanthemums.—As a precaution against damage by autumn gales, which are now due, Chrysanthemums growing in pots should be fastened to their supporting wires. The main stems should also be fastened securely to their stakes and bush plants tied in frequently to avoid breakage of the shoots. Many varieties are now showing flower buds, and where specimen blooms are required, timely attention in the matters of disbudding and removing side-shoots is necessary, while feeding the roots, either by means of a rich top-dressing or frequent applications of diluted liquid manure will help to swell the buds, and at the same time imparts a dark green colour to the foliage.

Perpetual Carnations.—These plants are growing freely, and if not already done, they should be secured to stakes to ensure upright growths. Various methods are advocated for staking perpetual Carnations, but none of these seem to surpass the placing of three stakes in each pot and looping green twist round these as required. Where large numbers are grown, the cost of the stakes may be a consideration but here we have an abundance of Bamboos, and find that the shoots of Arundinaria nitida make neat and strong stakes; when necessary we can cut a thousand or more shoots of this Bamboo without interfering to any great extent with the appearance of the clumps.

FLOWER GARDEN.

INULA ENSIFOLIA.

This is one of the later-flowering species of these showy border plants. It is a neat, compact-growing subject, forming a rounded tuft eighteen inches through, and about nine inches high.

Each of the stiff, wiry stems terminates in one or more yellow, Daisy-like flowers, two inches in diameter. The stems are closely feathered with narrow, dark green, glabrous foliage. The dwarf habit and floriferousness of this Inula make it an ideal subject for fringing the edge of the hardy flower border. *F. W. Jeffery.*

A TALL CAMPANULA PYRAMIDALIS ALBA.

I have, growing in a south border, a plant of Campanula pyramidalis alba, with seven spikes of bloom. It has grown seven feet high and is completely covered with bloom to within one foot of the ground; some of the laterals are two feet long.

I have staked the stems out fan fashion, from nine inches to a foot apart. The plant provides a lovely show of bloom. I have also the blue type growing beside it, but, unfortunately, this has not done so well.

I have grown many of these plants in pots for decorative purposes, also in open borders, but have never seen so noble a specimen in my fifty years' experience of gardening.

I consider this type of Campanula is worthy of more attention from growers, not only for pot cultivation, but especially for growing in borders out-of-doors. *Wm. Healey, Tilmore Gardens, Petersfield.*

LUPINUS PAYNEI.

This handsome Californian Lupin, which often attains a height of over six feet, is a welcome addition to the list of plants available for use in the herbaceous border. The flowers are chiefly of pink and lilac shades.

Plants raised from seeds sown early in spring will flower the first season, and during their second year will produce flowers in profusion early in July. The plants are graceful and develop large spikes of flowers from two feet to two and-a-half feet in length.

The severe weather which was experienced during the past winter killed several of our plants, but others came through safely without protection. As the growths are thrown up from the ground level, protection may be easily provided by placing coal ashes over the crowns late in autumn. *Charles Hodgson, Acton Place Gardens, Acton, Sudbury.*

LOBELIA HUNTSMAN.

Growing in a corner of my garden with an Ivy-clad wall behind it, a Laurel hedge at one side, and a grass plot in front, a colony of not quite a dozen pieces of this Lobelia is by far the brightest patch of colour in this or any garden within sight. Scarlet Salvias and Paul Crampel Geraniums are bright; Tropaeolum Fireball may be similarly described; other varieties of Lobelia cardinalis, L. fulgens and L. syphilitica are very attractive but the variety Huntsman excels all, and there are three reasons which contribute to the excellence of the effect produced. First, the foliage is green, and is covered with a dense soft tomentum of a grey tint, thus affording a better foil to the flowers than does the mahogany-red tint of Queen Victoria variety. Secondly, the flowers are the largest of any Lobelia I know, and thirdly the petals are coated with a lustrous sheen which is like fine velvet, and every light seems to be reflected with a radiance only a few flowers can emulate, and this flower being of the purest vermilion-scarlet imaginable, outshines all others in the garden.

My plants are the produce of half-a-dozen roots obtained from Mr. T. Smith, Newry, in early spring, the number being increased by dividing such as permitted it, the pieces being potted and started in a frame before committing them to the ground.

One point should be mentioned; the plant is evidently of aristocratic descent and accustomed to high living, for this little patch has received more of both solid and liquid nourishment than any other plants I possess and it seems quite impossible to over-feed it. The stems at the base are very strong, and the plants stand tall and erect, unstaked, although even at the time I write the wind is damaging many dwarfer plants which have allowed branches to steal beyond the restraining canes and greentwist.

Below the Lobelia I planted the delicate sulphur-cream and blush-tinted Antirrhinum Sybil Eckford, and with a mass of their charming flowers and a background of dark green the whole effect is one that might well be repeated in the most select garden with highly gratifying results. I shall risk one or two plants in the open, but lift and winter the remainder in a frame for safety and to facilitate increase of stock in early spring. *A. J. Macself.*

HARDY FLOWER BORDER.

HEMEROCALLIS.

I was pleased to see attention drawn to this useful border plant, on p. 126, and a note of some of the newer varieties. The season has been particularly favourable to the Day Lilies, which delight in a cool, moist, root-run, although they will endure, and enjoy, so long as moisture is ample, a large measure of sunshine.

In various gardens visited of late, I have noticed Hemerocallis of several kinds flowering with unusual freedom, and despite the brevity of the life of the individual blooms, their display has been well sustained for a period of considerable length.

In some instances it has been apparent that big, old clumps have failed to make as good a show as could be wished, and the reason is obvious; the plant makes a spreading mass of thick, fleshy roots which are greedy for moisture and nourishment, and where these roots have become densely crowded it has generally been apparent that no attempt has been made to replenish the exhausted supplies of nourishment.

Hemerocallis should be overhauled, divided and transplanted in soil of good heart at intervals of not longer than four years. Animal manure, which has lost its rank freshness, should be supplied, but where this is scarce, Hop manure may be used with satisfactory results.

A few of the oldest species are still worthy of notice, the yellow of H. flava being of extreme clearness and pleasing tone. H. fulva flore pleno is a rather coarse, and sometimes disappointing plant in a prominent border, but may serve a useful purpose in company with Lythrums, Spiraeas and Epilobiums grouped around informal water gardens.

Some hybrids are strikingly effective, either by reason of distinctive colouring or large size; for instance, Hybrida Apricot is of uncommon shade, as indicated by its name; Golden Bell is rich and shining in its real golden yellow, and a deeper orange is provided by H. luteola, which has H. Middendorfiana and H. aurantiaca in its parentage.

Gold Dust, Orange Man, and Sovereign are three varieties in three progressive shades of orange, and there are two extra early bloomers of pleasing character, one being Queen of May, and the other Aureole. H. graminea is slender-leaved and slender-stalked, an elegant plant which is by no means new, but apparently is slighted because it is small in comparison with others; there are, however, places where a small clump of yellow, surmounting graceful, reed-like foliage, will just meet requirements and produce the correct effect.

Several other Hemerocallis are available, but it is seldom necessary to grow an extensive collection of plants which bear close resemblance, and from the few here mentioned and some of the newer ones described by Mr. Logan, average requirements may very well be filled. It is where the family is not represented at all that one would suggest at least one or two specimens which might be planted, preferably before the end of September. *A. J. Macself.*

ALPINE GARDEN.

PENTSTEMON CAMPANULATUS.

This is a good plant for the rock garden, and if generously massed will present a pretty picture during the summer. It is of somewhat slender growth and about one-and-a-half foot in height; the leaves are linear and slightly serrated. The panicle is elongated and naked. The flowers are somewhat variable in colour, ranging through pink, violet and purple, pink and rosy-lilac shades predominating.

A stock is easily propagated from cuttings. This pretty Pentstemon was introduced from western North America in 1794, and is synonymous with P. angustifolius, P. atropurpureus and P. pulchellus, and has been referred to Chelone under the specific names of atropurpurea, campanuloides and rosea. The plant lasts long in flower and is an ideal subject for the higher parts of the rock garden; it is easily raised from seeds. *Ralph E. Arnold.*

HYPERICUM REPTANS.

Though probably the most beautiful of all the prostrate St. John's Worts, one does not often see a really good plant of Hypericum reptans in rock gardens. It may be that many can ill afford the necessary space, for this species is a wide spreader. But, given a sloping rock-face a yard across, let it be covered or nearly so with the soft green verdure and abundant golden flowers of this delightful species and the garden can have no fairer ornament. Nor is that all, for the perfectly prostrate foliage of H. reptans is usually tinted with yellow and red, and each opening bud is a burnished cone of mahogany-crimson.

H. reptans should, when possible, always be placed nearly at a level with the eye, for only in such a position is one able to appreciate to the full the great beauty of its gleaming blossoms which actually lie upon their carpet of green. If not quite hardy everywhere, H. reptans will withstand much winter wet and frost without injury, provided the soil is really light and gritty, the aspect open and sunny and the ground or rock having a gentle slope.

I have not found H. reptans always easy to establish, but mid-September or spring are probably the best times to plant. Once it becomes established, however, it is one of the heartiest of the race. Though this species is, as I have suggested, a robust grower and rapid spreader under congenial conditions, it does not become a menace to other subjects.

The flowering season extends throughout the late summer and autumn and propagation is not difficult by means of cuttings or seeds.

VERONICA CANESCENS.

There is no more beautiful species among the rock-garden Speedwells at this season than V. canescens, a native of New Zealand, which, according to Farrer, "lives at home in the dried margins of lakes and pools in both the Islands and up to three thousand feet in the mountains."

At any other time of year V. canescens appears only as a film of rather dull, bronzy-green over the surface of the soil. But from July onwards this veil of delicate growth is chequered all over with charming little flowers in a most attractive china-blue. Though it spreads freely, covering perhaps two or three square feet in as many years, it is even closer and finer than Arenaria balearica and much less enveloping than that pretty Sandwort.

Happily, V. canescens is quite reasonably hardy in any average gritty soil. It appears to enjoy a rather cool place, especially in summer, and makes an admirable carpeting for small bulbous and other plants. In this garden it covers the ground occupied by a scattered colony of Rubus arcticus, and when this tiny Raspberry comes into its second flowering the combination of pink and pale blue is singularly fascinating.

V. canescens roots as it spreads, so that there is no difficulty in securing fresh stock, and a piece potted-up in autumn and kept in a cold frame will ensure its safety where there is any doubt as to the plant surviving the winter. *J., N. Wales.*

BULB GARDEN.

BULBOCODIUM VERNUM.

The spring-flowering Bulbocodium vernum is not common in gardens. This is probably owing largely to the superior beauty of the Crocuses of spring. Yet B. vernum may still be considered as giving a feature to the garden which cannot be secured by the Crocus alone, and it blooms about the same period—February and March. The colour is not precisely the same as even the brightest purple Crocus, while the form of the flower is different, and, afterwards, the broad leaves appear.

Bulbocodium vernum is a very old plant in gardens, as it was known to Parkinson and was called by him, "The Meadow Saffron of the Spring." It was known also to Bauhin as Colchicum vernum. The name of Bulbocodium is that given by Linnaeus, on account of the woolly covering of the bulb or corm, the derivation being from *bulbos*, a bulb, and *kodion*, wool.

The flower has rather pointed segments of bright purple, varying slightly in tint in individual plants. The leaves begin to appear soon after or with the flowers, but are not fully developed until the blooms are over.

B. vernum is increased by seeds or offsets. It is most effective in a mass, and is perfectly hardy. It must be noted, however, that slugs are highly partial to this plant and often destroy it. This is most frequently the case when only a few bulbs are growing together. B. vernum should be planted about three inches deep in good loam. It is a native of Spain. *S. Arnott.*

TULIPS.

The modern florists' varieties of Tulips are so intensely beautiful, highly decorative and comparatively cheap that they completely overshadow the species, yet the latter, if not of the commanding appearance and gorgeous colouring of the varieties, cannot be surpassed for real loveliness, and should be grown in small groups in every garden.

Tulipa Kaufmanniana is a very charming species which is only six or eight inches high. The typical flowers have white and yellow petals and sepals with the interior striped red and being the earliest of all Tulips to flower it is a very desirable plant to grow. There is a variety called Brilliant which has glowing flowers of Turkish-red, and a charming one with pure white flowers and very dwarf habit called Gaiety.

T. Clusiana is an attractive species, white inside with delicate blue centre, and outside striped crimson. T. Eichlerii has splendid crimson-scarlet flowers with yellow and black centres and is very effective, while T. dasystemon is a very dwarf variety with three to five flowers on a stem, yellow and white in colour and very striking.

A few groups of these interesting plants at the top of the rock garden give the greatest delight in the early months of the year, and in such positions they do better than in open beds, as, owing to their early flowering habit, there is danger of the flowers being injured by late frosts, and by planting where the sun does not reach them early in the day this may be obviated. *A. P. C.*

CYPELLA HERBERTII.

This quaint and lovely bulbous plant is easily flowered in a well-drained soil in a moderately sheltered position. If permanent plantings are made, some measure of protection should be afforded the plants during the winter. It is, perhaps, more satisfactory to lift and replant annually.

The flowers are yellow, varying from a pale shade to a deeper colour, best described as chrome; the segments are ovate at the tips somewhat contracted in the middle, and spotted or lined with a deeper colour; the flowers are sparingly produced on a stalk.

The leaves are lanceolate and tapering; the bulbs are tunicated. The plant grows twelve to fourteen inches high. *Ralph E. Arnold.*

ORCHID NOTES AND GLEANINGS.

PLATYCLINIS FILIFORMIS.

The splendid plant illustrated in Fig. 91, shown by Messrs. Armstrong and Brown at the meeting of the Royal Horticultural Society, at Vincent Square, on August 24 last, as Dendrochilum filiforme deservedly received a card of Cultural Commendation. The species was introduced from Manilla in 1836 and has long been valued as a graceful Orchid which produces elegant, drooping spikes of yellow flowers, which possess a delicious perfume. All the species are of fairly easy culture and thrive best in the temperature usually afforded Cattleyas. The most suitable compost is peat and Sphagnum-moss and, as abundant supply of water at the roots is essential during the growing season, there should be ample drainage. When growth is completed the water supply should be gradually reduced, and only sufficient to keep the pseudobulbs firm be given.

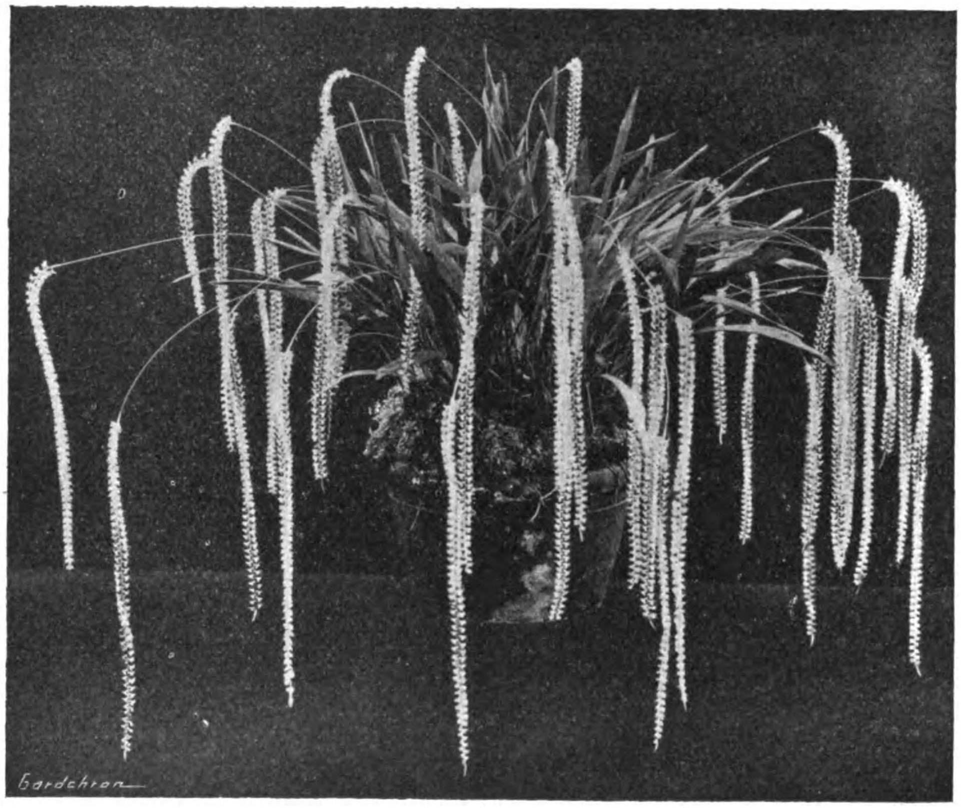


FIG. 91.—A PLANT OF PLATYCLINIS FILIFORMIS WITH THIRTY-EIGHT INFLORESCENCES.

CATTLEYA WARSCEWICZII (GIGAS).

The flowering season of this noble Cattleya and its varieties extends from May to almost the end of August. Although the species was discovered so long ago as 1848 or 1849, it was not until after it was re-discovered, about 1870, that it became generally known and cultivated. Since that time various types and forms have been introduced, some free-blooming, others shy in flowering.

Many growers fail to flower this most useful Cattleya to their satisfaction, but no Cattleya of the labiata section will produce flowers in such quantity as C. Warscewiczii when its cultivation is properly understood; in its many forms there is sure to be some plants which produce flowers more readily than others.

Cattleya gigas imperialis was, at one time, considered to be shy-flowering, whilst C. gigas Sanderiana was considered to be the opposite; but to my mind all types may be made to produce flowers with rational treatment. Soon after the individual plants have completed their growths and produced their flowers, new roots will develop from the base of the last formed pseudo-bulbs; at this stage the plant, if it needs re-potting, should receive this attention, and be placed in a cooler and drier position for some considerable time, when it will speedily fill its pot with roots. Water should be applied from time to time as the compost becomes dry, but only sufficient moisture is necessary to prevent shrivelling. Too little water has the same effect as too much, hence the necessity of careful attention in this respect; the aim of the cultivator should be to keep the top growth of his plant dormant whilst it gradually fills its pot with roots.

Before the winter sets in the plants should be returned to the warmer end of the Cattleya house, and placed in a position where they can enjoy all the light available.

The usual Cattleya compost is suitable as a rooting-medium, and either pots or pans may be used as receptacles.

Towards the latter part of February it will be observed that the greater number of the plants are commencing to grow, and as the growth extends the supply of water may be increased.

My experience is that those plants which produce their growths at that season invariably make flower sheaths and develop flowers; in one case I had nine blooms on a single spike, several others had seven blooms, but usually four or five flowers are developed.

During the summer the plants should be grown in a light position in the warmer end of the Cattleya house and be afforded a plentiful supply of soft water whenever the rooting medium becomes dry.

Hybridists have made the greatest use of the different varieties of this most noble species; it not only imparts its colour but also its vigour to its progeny, and after very careful observation it can safely be said that few Cattleya Gigas hybrids are bad growers.

It has been used as a parent with the whole of the other species, and very many hybrids—both of the albino and coloured forms—with the most satisfactory results, and its progeny includes some of the finest present-day hybrids, which may be especially recommended to those who require large quantities of these beautiful flowers for decoration.

The range of colour in the different varieties is most varied, from white through various shades of mauve, to the deepest and richest hues. Those which are, perhaps, most generally admired have white sepals and petals, with highly coloured lips, such as C. W. Frau Melanie Beyrodt, and several hybrids derived from this and other white parents. All forms, however, are beautiful and worthy of extended culture. *J. T. B.*

INDOOR PLANTS.

CESTRUM (SYN. HABROTHAMNUS).

(See Coloured Supplement.)

Cestrum, which is more generally known in gardens as Habrothamnus, is a large genus of greenhouse shrubs, several of them being more or less hardy with the shelter of a warm wall, in the west. But it is as conservatory or greenhouse plants that they are more generally known, being grown for clothing back walls, pillars and rafters, for which purpose they are best planted out in a well-drained bed or border. They may also be grown as specimen plants in large pots or tubs, their successful cultivation in receptacles presenting no difficulty, as they thrive in any good potting compost.

Cestrums are easily propagated by means of cuttings, which root readily at almost any time in a close propagating case, although August is an excellent month for raising a stock of plants for flowering the next year. The young plants should be potted on as they require increased room, and if intended as specimen plants, frequent pinching is necessary to promote a bushy habit; if they are required for planting out, less pinching is necessary.

As most of the species are natives of Mexico, they succeed in an ordinary greenhouse in which a temperature of 40° to 45° can be maintained during winter. Specimen plants may, with advantage be stood out-of-doors during the summer. Cestrums are subject to attacks of mealy bug, green and white fly, and measures must be taken to keep these pests in check. After flowering, the plants should be pruned back or thinned, according to requirements, and the space it is decided to cover.

C. aurantiacum is a native of Guatemala, and was introduced on 1843; it is figured in *Bot. Reg.*, 1845, t. 22. This species has beautiful orange-yellow flowers which are produced in great profusion; it is an excellent plant for covering a wall or the pillars in a cool conservatory, and is more shrubby in habit than the well-known C. elegans. It is surprising that this Cestrum is not more generally cultivated, for it flowers freely in six or seven-inch pots, and such plants are excellent for furnishing the plant stages. C. elegans is a well-known plant in gardens, and was introduced from Mexico in 1844; it is figured in the *Bot. Reg.*, 1844, t. 43, and *Bot. Mag.*, t. 5659. The purplish-red flowers are freely produced during spring and summer; the blooms are succeeded by beautiful reddish-purple fruits, but they are seldom produced in cultivation although, no doubt, hand-pollenation would ensure a crop setting.

There is, or used to be, in cultivation a variety named argentea, with beautiful variegated leaves, but this appears to be lost to cultivation. This old favourite indoor plant is seen to best advantage when used for covering a wall or pillar in the conservatory.

C. Newellii (see Coloured Supplement) is a very beautiful plant with bright crimson flowers, which are freely produced in dense, terminal clusters. This Cestrum is said to have been raised from seeds by Mr. Newell, Downham Market, England, and it is possibly a seedling from one of the species, such as C. fasciculatum. C. Newellii is a plant which is grown out-of-doors on walls in west country gardens under the name of C. corallina.

C. Parqui is a shrubby species, a native of Chile, and is figured in *Bot. Mag.*, 1770. It was introduced in 1787. The plant is hardy in the south and west of England at the foot of a warm wall; its whitish-yellow flowers are not showy but are fragrant at night.

C. diurnum, C. nocturnum and C. laurifolium are all natives of the West Indies, and have white and yellowish-white, fragrant flowers, but at present none of them appears to be in cultivation in this country.

C. fasciculatum, was introduced from Mexico in 1843; it is illustrated in *Bot. Mag.*, t. 4183. This species has purplish-red flowers and is of the same habit as C. elegans and C. Newellii. C. Smithii has soft pink flowers, and as it is of compact, shrubby habit, it makes a useful plant for furnishing the plant stages; if the leading shoots are pinched several times bushy specimens may be grown in six-inch pots.

So far, I have been unable to trace the origin of this plant, but believe it was introduced by Messrs. W. Bull and Son. The Cestrums most common in cultivation are C. elegans, C. aurantiacum and C. Newellii, and all are useful for general decorative work. *J. Coutts.*

RHODODENDRON FRAGRANTISSIMUM.

This variety of greenhouse Rhododendron is well deserving a word of praise, for it flowers freely under glass early in the season and does not entail one-third the trouble to grow as many less useful plants. The flowers are white, fragrant and abundantly produced.

Pot plants should be grown in a sweet, loamy compost mixed with peat and grit and the drainage should be efficient, as large quantities of water are requisite during the summer especially when the pots are rather small and well-filled with roots.

All seed vessels should be removed so soon as the flowering period is over, and any small, useless shoots cut away, to ensure sturdy growth. When the season's growth is completed the plants may be stood out-of-doors, plunging the pots in coal ashes, and in this position they may be allowed to remain until the end of the season. *H. Markham.*

NERINES,

The flowering season of these exotic bulbous plants is approaching and they should be examined for mealy bug, which often proves troublesome, and if neglected will seriously damage the developing flower spikes and young foliage.

N. Fothergillii var. major is the first to commence flowering, and the plants should, if they have been stood in cold frames during the summer, be placed in a sunny greenhouse. Give the roots a thorough soaking with clear water as the flower-spikes and fresh growths commence to develop.

Nerines usually flower best when the pots are crowded with bulbs, thus frequent repotting is not desirable; when it is necessary, the present is a suitable time to undertake it, or when the plants are just commencing to show signs of growth.

After repotting water should be afforded the plants with great care until they have made a quantity of new roots. N. Bowdenii, N. undulata, N. crispa and N. filifolia are all more or less evergreen, and should never be entirely dried off, as is too often done. *J.*

TREES AND SHRUBS.

TREES AT HILLSBOROUGH CASTLE.

Hillsborough Park, formerly the seat of the Marquis of Downshire, which has recently been purchased by the Imperial Government as the official residence of the Governor of Northern Ireland, is pleasantly situated on high and quickly sloping grounds by the Dublin road, about twelve miles distant from Belfast.

The old castle or fort, which dates from 1641, is of particular interest as having been occupied by William III on the eve of the Battle of the Boyne, while the adjoining grounds, which are pleasingly diversified and highly picturesque with splendid views of lake and mountain, contain some of the largest specimens of Coniferous trees that are to be found in this country. Unfortunately, like many other home estates, the park grounds and trees have for some years been neglected, but have now received the necessary attention at the hands of His Majesty's Office of Works, under the supervision of the present writer.

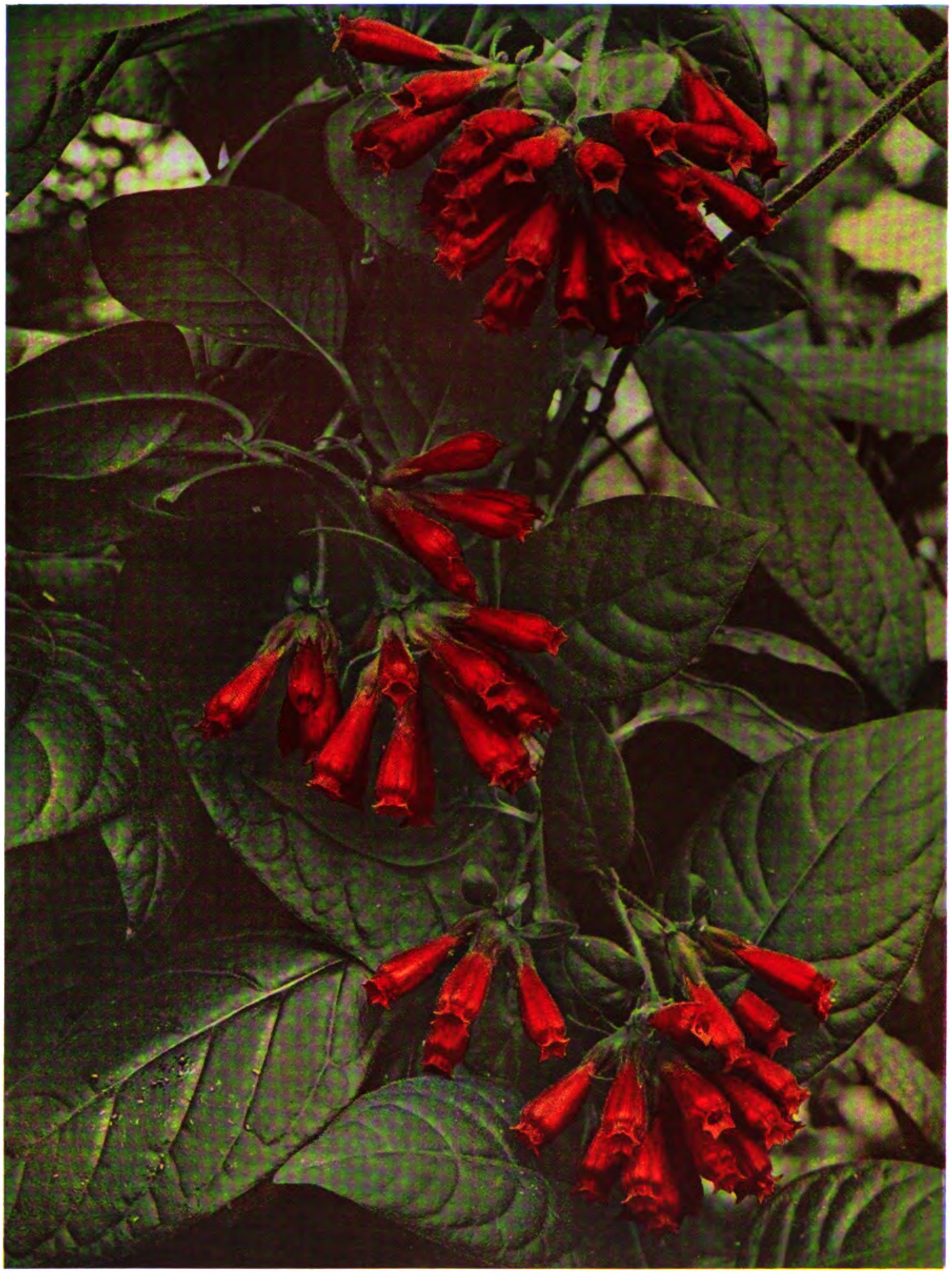
When the extensive collection of rare and interesting trees and shrubs is taken into account, it must be considered fortunate that so keen an arboriculturist as the Duke of Abercorn is the first in residence. Growing in the pinetum and elsewhere are some trees of unusual proportions, notably varieties of Tsuga, Cupressus, Thuja, Juniperus, Libocedrus and others, while the fine old Beeches, giant specimens of the Turkish and evergreen Oaks, and varied collection of underwood all combine to render the place one of particular interest to lovers of trees and shrubs.

Particularly noticeable are several specimens of Pinus insignis, one of which, growing near the lake, planted by the Marquis of Downshire in 1872, or fifty-three years ago, is now well over one hundred feet in height, with a heavily-branched trunk that girths eleven feet three inches at a yard from ground level. The cones on one of these trees are remarkably persistent, studding the trunk and larger branches in a most unusual way, and so firmly attached are they that a hard knock is required to liberate them from the wood.

Many of the Sequoias are well over one hundred feet in height, one of the largest girthing just over sixteen feet at a yard from the soil. The rare and beautiful Cupressus funebris is represented by several of the largest trees of their kind that I have seen, the pendulous branch tips of which hang gracefully downwards for sometimes two feet in length, this imparting a distinctly unusual and highly ornamental appearance. Like the tree of the same kind growing in the grounds of Walmer Castle, in Kent, a fruiting twig of which was illustrated in *The Gardeners' Chronicle*, February 8, 1919, the Hillsborough trees are not confined to single trunks, but send up several stems and so have rather a wide and far-spreading appearance. Libocedrus decurrens is simply perfection, the tall, columnar body of closely-packed foliage being as perfect as if the trees had been shorn into shape. Some of these trees are well over seventy feet in height, the branch-spread being rarely more than seven feet or eight feet, indeed, at six feet and fifty feet up, the diameter of spread does not vary by a few inches.

The growth of the individual tree in a clump of mixed Douglas Fir and Hemlock Spruce is somewhat remarkable, the average height of these Conifers being over ninety feet, the stem girths varying from ten feet to twelve feet at a yard from the ground level. Most of the Douglas Firs contain over 120 cubic feet of timber, while one of the largest Hemlocks has a girth of eleven feet at a yard from the ground. The soil in which these fine trees are growing is, for the greater part, alluvial deposit or a greasy, yellow loam and fairly damp, being close to the water margin. The large-fruited Cypress (Cupressus macrocarpa) thrives to perfection, as also do several rare species of Juniper, and the far too common Araucaria, which here, as everywhere else, becomes unattractive by reason of the loss of many of

Supplement to The GARDENERS' CHRONICLE



CESTRUM NEWELLII

the lower branches. Rarely have I seen Cryptomeria japonica, the Japanese Cedar, in better form than the several trees of this kind that are to be seen in these grounds, as is indicated by the abundant leafage, which is of the peculiar dark green shade for which this tree is remarkable. The Plum-fruited Yew (Cephalotaxus) is represented by rather a poor specimen, while Thuyopsis dolabrata, with its curious hatchet-shaped leaves, from which the popular name of the tree is derived, has in several instances attained to over fifty feet.

Both the common and Irish Yew are well represented and have attained to goodly proportions; the trees of the latter in the avenue that extends from the castle terrace to the Temple pool are remarkably uniform in height, and branch-spread. Both the Noble and Grand silver Firs are to be seen here, at their best, the latter being one of the largest of its kind in the British Isles, a tree of great height, with wide sweep of branches, and a ponderous trunk that girths twelve feet eight inches at a yard from the ground. The common Silver Fir is in abundance, and may be seen towering for many feet above the surrounding trees, one of the best trunks containing 265 cubic feet of timber, while others are over 110 feet in height. Lawson's Cypress, which is particularly well represented, seems to revel in the rich, dampish loam, and has attained to unusually large dimensions, some specimens being well over seventy-five feet high and abundantly furnished with the richest and healthiest of leafage.

Both the Cephalonian and Spanish Silver Fir have taken well to the deep soil at Hillsborough, and, in judging from the rate of growth and their general appearance, will attain to very considerable dimensions. Cupressus torulosa and C. Goveniana are well-represented; indeed, in Ireland there are more and larger specimens of both these rare Conifers than I have seen either in England or Scotland. Rarely have I seen larger Beech trees with better-rounded boles than those at Hillsborough. One of the largest of the Sweet or Spanish Chestnuts has a girth of over twenty feet, and contains in the butt cut alone, well over 160 feet of wood. Famous amongst the Oaks is a far-spreading tree of Quercus Cerris on the lawn, the branches of which have an unusually wide spread, covering a diameter of 120 feet.

By the kitchen garden wall is growing an exceptionally large tree of the Evergreen Oak, the huge, deeply-fluted stem of which girths seventeen feet four inches at a yard up, the branches covering a ground diameter of sixty six feet. There are some good trees of the English Maple. The Tulip Tree is well represented, in which the beautiful autumn tints of the handsome foliage is much admired. All the trees referred to are growing in what is known as the inner or small park; the outer park, which is in the hands of the Minister of Agriculture and extends to fully one thousand acres, contains a number of woods and plantations, which are principally composed of the commercial type of timber trees. *A. D. Webster.*

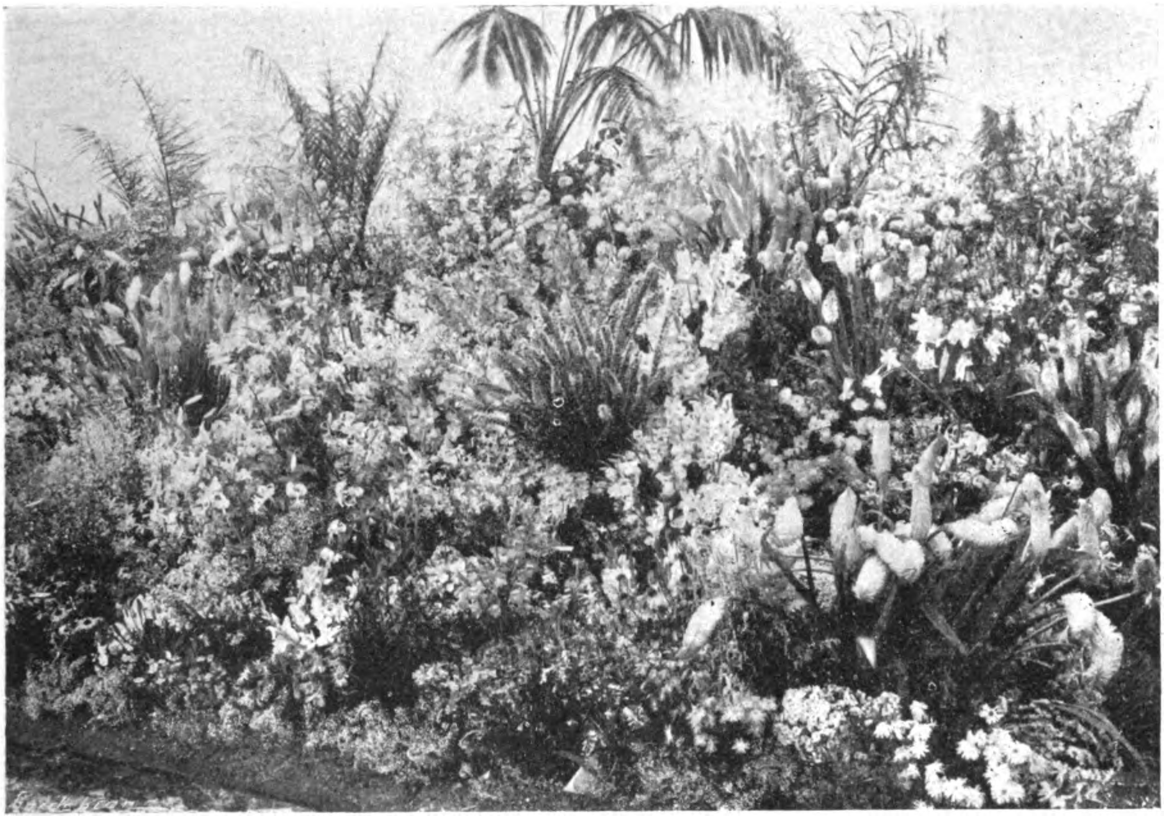


FIG. 92.—SOUTHPORT SHOW: COLLECTION OF HARDY BORDER FLOWERS EXHIBITED BY MESSRS. M. PRICHARD AND SON.

(see p. 179.)

ROSE GARDEN.

A FEW ROSES OF MERIT.

The real worth of a Rose cannot be ascertained until it has been distributed two or three years, but by that time there are few places which will provide a more accurate estimate of its value than a nursery where Roses are grown to supply nurserymen. For instance, when I saw a great batch of ten thousand maiden dwarfs of Shot Silk growing on Mr. Walter Bentley's nursery I knew Shot Silk had proved highly satisfactory, for Mr. Bentley grows just what is in greatest demand, and he would not occupy space with ten thousand of one variety until he knew he was right in so doing. The sight of that far-reaching mass of this gorgeously-coloured Rose, every plant aglow with flowers and opening buds, was worth a long journey to see.

The variety Lady Roundway has made a niche for itself among the very best of bedding Roses; it is one of those varieties which will grow in such a manner as to give the impression that every plant means to contribute its proper share toward the colour display, and to behave as well as its neighbour. In the nursery rows there seemed to be no appreciable difference in the size of the plants, and that is an excellent point in a bedding Rose. Lady Dickson Hartland is a variety one need not fear to recommend; it grows well, blooms well, and keeps its form and colour in all sorts of weather.

Etoile de Holland, a real red Rose of shining brilliance, bids fair to rob General McArthur of the title to being the best red for the average garden. It has to be a good Rose to challenge General McArthur, but Etoile de Holland has a big share of the qualities we look for in an ideal garden Rose. It does wonderfully well in town gardens, and after watching it carefully I have failed to find a single serious fault in its character. For extremely rich orange, flushed with prawn-red, Severine is hard to beat. The flowers are admittedly thin, but they are lovely in the bud stage and produced with wonderful freedom.

When National Emblem was introduced the beauty and brightness of its flowers made a very strong appeal to rosarians, but, alas! the plant was found to be a poor, weak thing. It is good news, therefore, that a climbing sport has been fixed and largely propagated which retains the precise character of the flower but is a grower of wonderful vigour and strength. Climbing National Emblem is a valuable Rose, and whilst it will be superb for training on pillars or on white-painted woodwork, it will also be extremely serviceable for pegging down, a method of growing which might still be extended with gratifying results. An almost incredible number of flowers may be secured from a single plant which has been given one season's growth after hard pruning and is then pegged down with its long branches spread out to cover as wide an area as possible.

The disappointments concerning pegging down Roses, so far as they have been brought to my notice, are usually the result of planting maidens and pegging their branches down the first year. Such a method gives the Rose no chance, it is essential first to grow it for a season to establish the root-system and make substantial top growth. *M.*

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LILIUM PHILIPPINENSE VAR. FORMOSANUM.

So far as records go, this fine Formosan plant is a comparatively recent addition to the list of tolerably manageable Lilies, for though E. H. Wilson has unearthed specimens in the Herbarium at Kew Gardens, which were found by Wilford, Swinhoe and Oldham some sixty years ago, there does not seem to have been any mention of it prior to 1880, when Messrs. James Veitch and Sons exhibited flowering bulbs which Maries had sent them from Formosa, where he was then collecting plants for the firm. In the following year, bulbs were offered for sale in the Chelsea firm's catalogue at 10s. 6d. and 21s. apiece, and since F. G. Baker had identified the Lily as a variety—formosanum—of L. longiflorum,[*] it was sold as such. In the *Monograph of the Genus Lilium*, which was then going through the press in parts, Mr. Elwes expressed the view that the plant was allied to L. philippinense rather than to L. longiflorum, and it was a happy combination of circumstances which, thirty-one years afterwards, enabled him to confirm his first impression by examination of the wild plant in Formosa.

In due course, the bulbs sent home by Maries went the way of so many others of exotic origin, and as at that time the seminal cultivation of Lilies was seldom practised, a stock was not maintained and nothing more was heard of this variety till 1905, when Max Leichtlin raised a stock from seed sent to him two years before by a correspondent in Japan.

This seed was thought to have come from the Philippine Islands but Leichtlin was unable to identify the Lily, and concluding that it was new, provisionally named it L. Yoshidai,[†] after Mr. Yoshida, then secretary of the Tokio Horticultural Society, from which he had received the seed. Leichtlin sent bulbs under that name to the writer, but he mismanaged their cultivation, with the result that in three years his stock was exhausted.

Luckily, it was soon to be renewed, for in the course of their expedition to Formosa in 1912, Elwes and Price rediscovered the Lily, and later in the same year, Mr. Price kindly sent to the writer some seeds he had gathered of an alpine form of it on Mount Morrison. The seeds were shared with the Botanic Gardens at Kew, Edinburgh and Glasnevin, and such friends as cared to have it, and as the rate and percentage of germination was rapid and high, a stock of bulbs was soon raised. So prodigal is the plant of seed, so easily and quickly are bulbs raised that the maintenance of a stock in this country seems assured. So precocious, too, is the plant, that in a genial year, September is almost certain to see a few flowering bulbs in a batch of March-sown seedlings. These bulbs will be no larger than a good-sized acorn, and even at maturity, which is usually in the third year from sowing, they are seldom larger than a Greengage; they have stem roots, and so far as the writer has observed it, the stem rises straight from the bulb and does not creep about underground.

Like L. longiflorum, in similar circumstances, L. philippinense formosanum is evergreen, in the sense that in a greenhouse, or in the open in a mild winter, the stem and leaves persist and the bulb does not seem to go to rest. When in Formosa in 1918, Mr. E. H. Wilson noticed that at low altitudes this Lily appeared to flower every month in the year, the bulbs taking little or no rest, but continuing in growth and breaking up into colonies. At higher levels, where the seasons are more sharply defined, the Lily conforms to the season and flowers once a year[*]. In this country, the Lily does not seem to show any tendency to colonise, and the writer has not seen a bulb with more than one flowering stem. This, however, may turn on cultivation, for with Leichtlin's note on the Lily there was published a photograph of a specimen with three flowering stems[†]. The stem varies a good deal in height, but unlike some other Lilies, the stature does not seem to depend so much on cultivation as on the particular strain of seed. That is to say, plants which are descendants of the bulbs originally raised from Price's 1912 alpine seed, retain their dwarf habit and usually throw a stem varying from one to two feet, bearing one or two and occasionally three flowers. The strain raised from seeds Elwes collected from wild plants growing in the plains of Formosa grows from three to four feet high, and is rather more floriferous than the alpine strain. Other plants throw stems four or five feet high and sometimes, as shown in the photograph (Fig. 94) of a fine plant in the Marquess of Headfort's garden at Kells, Co. Meath, a stem will grow even higher. In some cases it has been possible to identify these taller plants as originating from seed (No. 10,961) collected by E. H. Wilson in 1918. They may be great-grandchildren of some particularly fine specimens the explorer found growing among Miscanthus Grass on a wind-swept knoll at 6,000 feet in Nanto prefecture.[*]

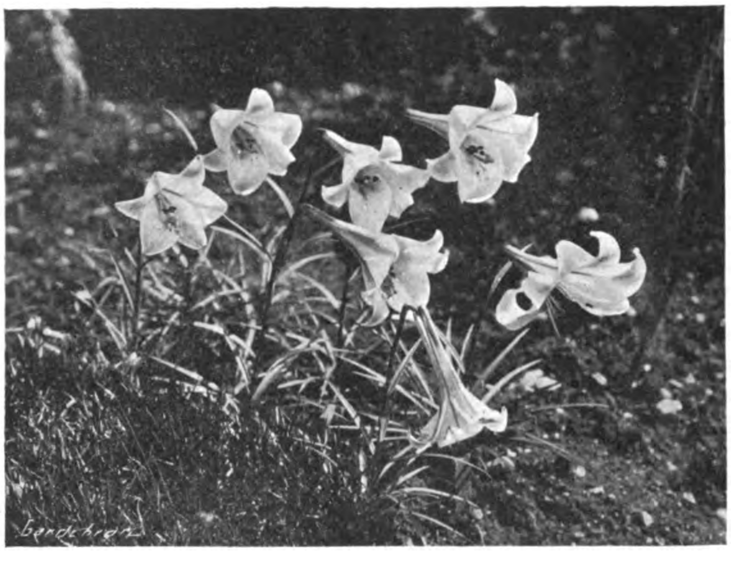

FIG. 93.—THE ALPINE FORM OF LILIUM PHILIPPINENSE VAR. FORMOSANUM.

Growing in Mr. Andrew Harley's garden in Perthshire. The plants are from 12 to 18 inches high.

As is perhaps inevitable, cultivators are by no means agreed in their opinion or their experience of this Lily as a garden plant. At the Edinburgh Botanic Garden some members of the little colony originally raised from Price's 1912 seed still persist, though the colony was broken up some years ago and the bulbs transferred to the rock garden. This colony and its descendants have been the main source from which many grateful amateur and professional gardeners have drawn or renewed their stocks. The Curator of the Edinburgh Garden has informed the writer that the Lily grows in the garden in a variety of positions and exposures and is very amenable to cultivation when compared with many other species. At Kew Gardens, on the other hand, the Lily has been as conspicuous a failure in the open as it has been a success in a greenhouse, and in other places in the south there has been no more success. At Glasnevin, L. philippinense var. formosanum was at first grown under a north wall where it flourished for some years, till the colony was dispossessed to make room for Rhododendrons. In their new place the bulbs flowered well for a time, but resented a further move and did not survive.

In his garden in Perthshire, Mr. Andrew Harley has found the alpine form of the plant perennial and the photograph (Fig. 93) is of a clump which was in bloom in the first week of August and has flowered for four years. Another colony in Mr. Harley's garden is seven years old. The stems are twelve to eighteen inches high, and Mr. Harley finds that the bulbs throw only one stem and neither increase nor die. The strongest-growing plants are under Rhododendrons in soil which is always moist and gets but little sun. These have flowered for the past six or seven years, and out of twelve bulbs, ten are almost sure to bloom annually. These particular Lilies were originally raised from seed of the alpine form in the Edinburgh Botanic Garden. At Logan, which is a paradise for many Lilies, Mr. Kenneth McDouall finds this Lily perennial in some parts of the garden and not in others. Some of his bulbs have flowered for six years. Mr. Elwes had no success with the Lily in the garden at Colesbourne, but cultivated it to perfection in a cold house, and though he has tried bulbs in many places and in diverse conditions, the writer has not found them perennial in the open.

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[*] *Gard. Chron.*, Oct 23, 1880, p. 524.

[†] *Garden*, Oct. 14, 1905, p. 238.

[*] *The Lilies of Eastern Asia*, p. 22.

[†] *Garden*, Oct. 14, 1905, p. 238, photo.

[*] *The Lilies of Eastern Asia*, p. 22.

On the whole, the failures in the cultivation of this Lily as a garden plant far outnumber the successes, though the latter are sufficiently pronounced to lead one to suppose that faulty handling may have some bearing on the failures, all of which cannot fairly be ascribed to our climate. On the other hand, the plant is seen to so much more advantage under glass as to point to the conclusion that, as is natural and perhaps inevitable in the case of a Formosan plant, it can never be a Lily for general cultivation in the open. None the less, the fact that it has held its ground in a few places for several years is of good omen, and should encourage enthusiasts to give it a trial and not to relinquish the experiment if the plant does not succeed at first. To the observant student of the genus nothing, perhaps, is more remarkable than the way a difficult species will settle down in apparently unlikely places and surroundings, and flourish, so long as it is left alone.

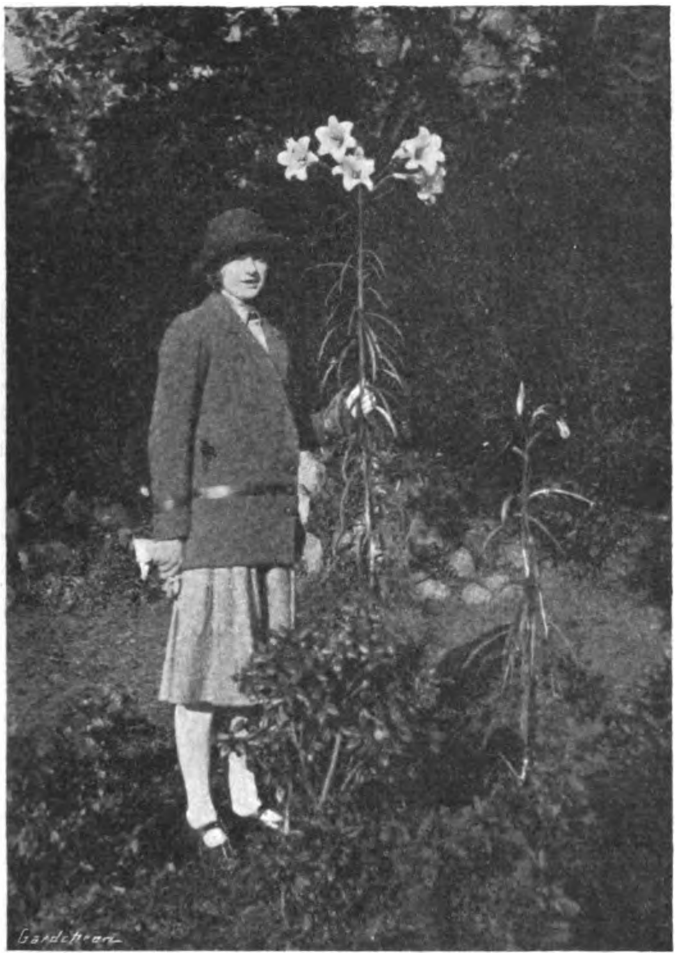

FIG. 94.—THE TALL FORM OF LILIUM PHILIPPINENSE VAR. FORMOSANUM.

Growing in the Marquess of Headfort's garden at Kells, Co. Meath. Lady Millicent Taylour, standing beside the Lily, is five feet eight inches high.

It seems to be assumed that because L. philippinense formosanum is perennial at Edinburgh and in places further north, southerners should have little difficulty in its cultivation, but the assumption is erroneous. In our northern climate the stems are naturally late in pushing through the ground, and in great measure escape the April and May frosts, which in the south cut the precocious stems down all too often. Vernal weather which blackens the stems of the far tougher L. regale makes a sorry sight of L. philippinense var. formosanum. In such circumstances, planting among dwarf evergreen shrubs, or in the shelter of taller evergreens, is of material help, provided the evergreens do not keep the ground too dry.

The flowers of the variety are usually about six inches long, decidedly shorter than those of the type, and the trumpet is wider and more open. The base of the trumpet seems to be always twisted from right to left. Sometimes the petals are without a trace of colour, sometimes they are beautifully marked with a vinous flush along the outside of the midrib, and then the stem is suffused with the same tint. Both white and coloured flowers may come from the same capsule of seed. The bulb is white and all but globose, and the seed capsule (Fig. 95) far longer than that of L. philippinense; in fact, it is the longest capsule of any Lily the writer has seen. A good specimen of the taller form of this Lily in bloom is an arresting sight, for apart from the loveliness of the fragrant flowers, the plant has a rare elegance of port which compels admiration. Though it is not yet possible to say that this Lily is a lime-hater, the growth is unquestionably finer where lime is absent. The bulbs are hardy in the sense that such frost as there has been during the present century does them no harm. But the writer does not know of a Lily of which the same cannot be said. It is not the bulbs which are hurt by frost but the stems. *A. Grove.*

NOTES FROM WISLEY.

In the trial of annuals at Wisley a very large proportion of the plants now in bloom belong to the Composite family. Among these is a collection of Cosmos, good varieties of which are Rose Queen, Crimson and Simpson's White. On looking at the various varieties it is very noticeable that one or two individual plants among them bear exceptionally beautiful and well-formed flowers, and it would appear that with still more vigorous selection these pretty plants might be made even more attractive.

A yellow-flowered Cosmos is seen in C. sulphurea, which grows to a height of about eighteen inches and carries a profusion of small, yellow blooms. Coreopsis cardaminifolia is a plant of similar habit and growth, with innumerable rich, brownish-red flowers, which have yellow stripes on the reverse of the petals. Other Composites in flower are old-fashioned Everlasting Flowers, such as Helipterums and Helichrysums. Good varieties of the latter are the orange-flowered Fireball and the pale pink Carmine Rose.

One of the most showy of all the annuals in this trial is Lavatera trimestris, which has flowered very well. The same, however, cannot be stated of the Sweet Sultans, which have been a failure. Many varieties of Nigella have also been poor, but this is largely on account of spring sowing, which is rarely satisfactory. The variety showing most vigour is Nigella hispanica, with purplish-blue, Anemone-like flowers, which are without the finely-divided involucral leaves which surround the flowers of Nigella damascena and the variety Miss Jekyll.

Included in the trial are varieties of Portulaca, popularly known as the Sun Plant, which revel in warm and brilliant sunshine under the influence of which their bright-coloured flowers open wide. One of the most attractive sorts is Salmonea, with large, orange-salmon blossoms.

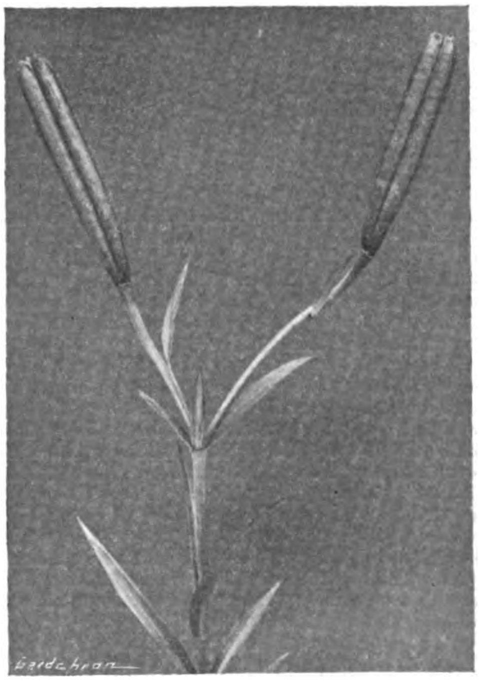

FIG 95.—LILIUM PHILIPPINENSE VAR. FORMOSANUM IN FRUIT.

Half natural size.

On the rock garden Gentians, such as Gentiana sino-ornata and G. lagodechiana are in bloom and bright patches are formed by the flowers of Ononis Natrix and of Scutellaria baicalensis, which is now making a fine display with its pale violet-blue blossoms.

The pink and feathery inflorescence of Spiraea alpina lobata and the pink spikes of the Himalayan Polygonum affine are also valuable in lending colour to the rock-garden at a time when there is not a large number of plants in bloom. Bloom is scarce also in the alpine house, but an exception occurs in Mutisia decurrens, a half-hardy climbing shrub with orange flowers, which is one of the few Composites climbing by means of leaf tendrils.

In the borders in front of the laboratory Ornithogalum lacteum, which has now been in flower for more than six weeks, is still blooming well, in company with Cypella plumbea, a graceful and elegant Irid, and Mimulus (Diplacus) glutinosus, an orange-flowered, cool-greenhouse shrub with sticky foliage. The red-flowered variety coccineus is also in bloom.

Of the few plants which remain in flower in the rock walls in the garden around the laboratory, Scabiosa Pterocephala (syn. Pterocephalus Parnassii) is worthy of note. This plant adapts itself very well to wall-gardening, and continues to throw out numbers of pale pink flower-heads which subsequently are resolved into feathery balls of grey.

Although the Apple crop at Wisley is a meagre one, Pear trees have, on the whole, fruited well. Many varieties growing as cordons have cropped exceptionally freely this year, especially the varieties Pitmaston Duchess and Louise Bonne of Jersey. *J. E. Grant White.*

NOTES FROM ABERDEEN.

THE season of flowering shrubs is drawing to a close, and already the ripening fruits of the Mountain Ash (Pyrus Aucuparia) give a hint of the approach of autumn with its glory of tinted leaf and ripened berry. There are, however, one or two shrubs of more than passing interest which flower at a time when few shrubs are in bloom, rendering them doubly welcome. One of these is the well-known Daisy Bush of New Zealand (Olearia Haastii) which for some time after its introduction was reckoned to be on the tender side, but a longer acquaintance with it has placed its hardiness beyond dispute, even in these northern latitudes, where it forms a large bush and produces its white, starry blossoms in great profusion.

Another shrub of great value is Hypericum patulum, which makes a fine, neat bush and produces its large, golden yellow flowers with much freedom; on bright sunny days the bees are busy among them from morning till night.

Buddleia variabilis is far too common a shrub in gardens to require special commendation, but there is this about it, that it seems to be very attractive to butterflies, especially the Cabbage White Butterfly and the Tortoiseshell butterfly.

The first flowers of Gladiolus primulinus hybrids opened in the last week of July. This is a splendid race of garden plants, the dainty colourings of the blossoms, and their production on graceful, slender spikes being in striking contrast to the vivid colourings of some of the large-flowered hybrids, with their stiff, stout stems.

An event of some interest was the flowering out-of-doors of two seedling plants of Lilium philippinense formosanum (see Figs. 93, 94), a very fine variety with graceful white trumpets, tinged towards the base with purple.

The majority of hardy herbaceous plants have finished flowering, but there are still several in bloom. Among them is the rich orange-yellow flowered Senecio clivorum, a very handsome decorative plant, which should be included in every collection of herbaceous plants. Another useful plant is Potentilla nepalensis, a free-flowering species from the Himalayas with crimson flowers, while Monarda didyma is a valuable, if old-fashioned, plant, the deep red flowers of which are very attractive.

Astilbe simplicifolia, which is a native of Japan, is eminently suitable as a subject for the rock garden. It is a dainty little plant with dark, reddish-green leaves, and the white flowers are borne on slender, dark-red stems. It is scarcely more than six inches in height. When grown in pots this Astilbe is useful for the decoration of a cool greenhouse.

Under glass, we have a fine display of the orange-scarlet flowers of Haemanthus puniceus, a member of an interesting genus of South African bulbous plants, first introduced into British gardens in the early part of the eighteenth century. A few years later, the same part of the world yielded the first species of Hypoxis, also a bulbous genus, of which H. Rooperi has produced its pretty, starry yellow flowers very freely since May. There are many of these South African bulbs, which require only the shelter of a cold greenhouse, or even a frame, for their successful cultivation, and they claim the attention of a wider public. *Robert H. Jeffers.*

DESTRUCTION OF ANTS AND RATS BY CALCIUM CYANIDE.

THE ant is a constant source of loss to the horticulturist, both in the tropics and in temperate climates. Though ants undoubtedly confer some slight benefit by carrying away small dead insects and putrefying matter, their habit of collecting seeds and their frequent attacks on living plants render them a pest. In tropical countries the gardener loses considerably should several ant nests become established among his green crops, to say nothing of the loss of ground actually occupied by large nests.

The frequent presence of ants' nests in experimental Cotton plots, where the continued life of every plant is essential, first led the writer to search for an easy method of destroying ants. Calcium cyanide, an insecticidal dust much favoured in America, and becoming increasingly popular in other countries, was tried successfully. A few notes on its use may be found helpful to others.

A finely divided dust containing forty per cent. calcium cyanide has always been used. After trying various dusters, a simple and portable type was adopted, namely, a Cyanogas Model No. 1 hand duster.

The duster is supplied fitted with a rigid delivery pipe. In dealing with small nests it was found that the addition of a piece of flexible rubber and a short glass nozzle drawn out to a fairly fine point enabled the dust to be driven into the smallest hole.

A simple improvised duster may be made, however, which serves the same purpose. This is described in the *Bulletin of Entomological Research*, Vol. XV, p. 175, from which source the following directions for making it are taken. A glass jar, thirteen inches in height by six inches in diameter, serves as a container, and is closed with a tightly fitting rubber bung, pierced with two holes, each to take, a quarter-inch bore glass tube.

One tube (A) is long enough to reach nearly to the bottom of the container, but the other (B) is cut off just below the lower surface of the bung. Above the bung, tube A is elbowed, while tube B is either straight or elbowed, depending on the purpose for which the apparatus is being used. The dust, to a depth of two or three inches, is placed in the container, and tube A is connected by means of a length of rubber tubing with a bellows. On working the bellows a current of air is forced in under the dust, and the atmosphere in the upper part of the container becomes heavily charged with the dust in suspension. This dust-laden air is driven out through tube B.

In the case of an underground nest, the time chosen for its destruction should be when the insects are within the nest. Any stragglers may easily be concentrated by placing a dead insect or scrap of sugar near the entrance. Having placed a few spoonfuls of dust in the duster, this should be applied to each of the holes of the nest. If the pump is worked forcibly dust will probably be seen to emerge from other exits, showing that the poison is penetrating the nest. The holes, after treatment, may be stopped with a little clay and the poison left to do its work. Any ants collected on the surface of the ground may be killed immediately by a light dusting.

Nests situated in old walls and masonry are sometimes more difficult to deal with. When located, sufficient dust should be pumped in to ensure the death of the ants, and the holes may be sealed with mortar.

Sometimes, following a first application of the dust, after a few days, ants may be seen again leaving the nest. These are probably freshly-hatched from pupae which were not killed on the first occasion. Moreover, in the case of very large nests it is difficult for the gas to reach the remotest parts immediately. In such instances a second dusting may be found necessary.

Ants and other insects which congregate under stones and in other sheltered positions may be killed by direct contact with dust. In fact, the dust pump is a useful implement to have always at hand, as few insects seem to be able to withstand direct contact with calcium cyanide. The moisture of the atmosphere and that concentrated round the insects' breathing apertures combined are sufficient to cause a quick evolution of the deadly hydrocyanic acid gas.

The writer has found the use of calcium cyanide most successful in the case of insects and other pests which live in narrow, confined spaces. Rat burrows have been cleaned out when these have been located in stables or underground. In this case the rats have generally bolted when the poison fumes have reached them, and have died on coming out from the burrows.

Bats in buildings often become a nuisance. A case in which the method was successfully employed for ridding out-buildings of these pests may be mentioned. Certain outbuildings adjoining a European residence in a native African town were found to be inhabited by many hundreds of bats (Liponycteris nudiventris). Prior to applying the poison, one room was prepared to receive the bats. Windows and other openings were closed by nailing damp sacks over them, and a little water was sprinkled on the floor. The sacking over one door was then lifted and fixed while the bats, which naturally sought the darkest corner, were admitted to the room. The sacking was then lowered and calcium cyanide as a fine cloud of dust was pumped into the room. The following morning a complete kill was found to have been effected.

For safety, it was thought advisable to fit to the pump a length of flexible tubing, so that the duster could be operated from a distance.

It is usually considered to be sufficient to sprinkle the dust on the floor in such cases as the one just described. The writer, however, is of the opinion that a speedier and better distributed evolution of gas will be produced by liberating the dust in fine particles into the atmosphere which has previously, if necessary, been rendered humid by the evaporation of water from a dampened surface.—*H. B. Johnston, M.A., C.M.Z.S., Assistant Entomologist, Sudan Government.*

APIARY NOTES.

IN preparing for winter, everything depends on being in time; even the success or failure of next year's crop of honey depend upon it. A stock that has wintered well rarely fails to gather a surplus of honey.

The queen should be the first concern. Every hive should be examined immediately, and, if there are many hives, notes should be made, for these will serve better than a good memory. Ascertain if the queen is laying regularly and compactly: that is, if she is filling each cell in rotation or only laying here an egg and there an egg, and a few on this comb, and a few on that. A good queen should be laying slabs of brood from now onwards until the advent of cold weather. Bees hatched in the next two months are those that will survive the winter and rear the first big cycle of brood for next year. There is no time to lose if young bees are required in quantity before the cold weather sets in to check brood rearing. Replace all failing or unsatisfactory queens with healthy ones forthwith.

After the queen, the next important matter is the store house. A great deal might be written concerning this point. Bee-keepers should understand that they are entitled to honey second and not first, for the bees have gathered it, and it is theirs. The apiarist should harvest only honey that the bees do not need, not a grain more. Of all the causes of loss in wintering bees two of the most common are shortage of food and bad food. With the latter I will deal later, considering at the moment only the question of deficiency of food in the hives. What is an adequate supply? The usual recommendation is to leave 30 lb. to 40 lb. of good honey and stores in a hive. It is not enough; 50 lb. to 60 lb. is needed. A hive with 50 lb. of honey in it when closed down for winter will not have 40 lb. in it by the time winter is actually here. Never forget that brood-rearing will continue into November, and in rearing brood the bees consume stores in an amazing fashion.

A standard comb filled from top to bottom will weigh about six pounds; therefore, the equivalent of eight such combs is required, and I do not think that this amount will be found in any single hive opened. It is not my experience anyhow. Because of that, I always run a proportion of my hives simply to supply stores to the rest. If that is not adopted then the bee-keeper must make it up by the next best thing—feeding! And this is just where procrastination is fatal. To feed bees after the middle of September is a great mistake, for all feeding should be over by the middle of that month. It is essential that the bees shall have time to cap whatever stores are given them, and warm nights are needful for the secretion and working of wax, also for the thickening and ripening of the syrup. Uncapped stores mean a wall of moisture for the bees to cluster against all the winter; it results in fermentation of the food followed by dysentery in the bees, and it means restlessness and uneasiness when all should be quiet rest. Unsealed stores are the bad food I referred to above. If feeding is necessary, obtain an air-tight tin with a push-in top and holding about ten pounds. Make minute holes in the top, fill the tin with the finest granulated sugar, pour boiling water on to this, until the sugar is melted, and the tin is again full. Be sure that, except for these holes, the tin is really air-tight, otherwise, when inserted, the syrup will run out in a stream. Place the tin on top of the frames whilst the contents are still warm—in the evening is best. Cover the hive up warmly, and by the morning the bees will have carried down the lot and be seeking for more. There is no need whatever to boil the syrup.

This food is far better than candy. Candy is expensive, it is messy when it has been in the hives a little time, and it is hopelessly hard work for the bees to convert it into suitable food. Warm syrup is easy to convert, it is done in a night, and is in the right place for use, a cell at a time. *J. Mavie.*

NOTICES OF BOOKS.

Flowering Trees and Shrubs.

Writers on flowering trees and shrubs for British gardens are, to a certain extent, at a disadvantage, in that the ground has already been adequately covered in the standard work of reference on the subject, and makers of new books on the same subject cannot very well do more than dip into the store of practical information this or that observant cultivator may have accumulated in the course of years, or concentrate on a few genera and amplify the knowledge already available about them.

In his *Handbook on Flowering Trees and Shrubs for Gardeners*,* the author, himself an expert in the cultivation of trees and shrubs, has combined the two courses, for while the book deals in detail with only twelve genera of trees and shrubs out of the hundreds available, so that in a measure the title is a misnomer, they are dealt with in the light of the knowledge acquired by the author in the school of practical experience. The book is avowedly intended for amateurs, and the botanical side of the subject is kept in the background.

The genera included in the book are Berberis, Buddleia, Ceanothus, Cistus, Cotoneaster, Cytisus, Genista, Helianthemum, Prunus, Pyracantha, Pyrus and Viburnum, and the information furnished about the particular species and varieties, their cultivation and propagation, is up-to-date, and obviously derived from first hand knowledge of the subjects dealt with. It is supplemented by a chapter on seaside planting, which should prove invaluable to the increasing number of gardeners who in these days of easy transit are clustering on our coast line. Pruning, propagation and planting, too, have a chapter to themselves, wherein amateurs will find much of interest and wise counsel. The fact that Viburnum Carlesii, for instance, may be propagated from single leaves inserted in sandy soil under a hand-light from June onwards, is not so well-known to amateurs in general as it should be.

To experienced planters the *clou* of the book will be the chapter on Flowering Cherries, in which Mr. Collingwood Ingram deals all too briefly with a subject he has made peculiarly his own. Mr. Ingram pertinently asks why these beautiful flowering trees are so comparatively neglected in English parks and gardens; it is a question which has often been asked before, and Mr. Ingram is probably not far from the truth in ascribing the reason to the almost hopeless state of chaos in which the nomenclature of the group was involved till comparatively recently, when, independently of each other, Miyoshi and Wilson published an enumeration of the Japanese Cherries. There should no longer be any excuse for the confused nomenclature of the past, whereof so many English gardeners have had a taste in the receipt of plants ordered to name but subsequently found to bear no relation to the name attached to them. This interesting chapter concludes with a list of such of the Japanese Cherries as are of proved hardiness here.

Though Viburnum bitchuiense for V. bitchiuense (a wild plant of the Japanese province of Bitchiu) slipped past the late Mr. W. R. Dykes's editorial eye, the book is singularly free from misprints, and the index is entirely adequate. At this time of day, a friendly tilt at the pluralising of Latin words, such as Helianthemums and Viburnums, is probably waste of ink, and so far as precedent is concerned, the author is on safe ground.

REMARKS ON THE CONDITION OF THE FRUIT CROPS.

(See Tables and Summaries, Ante, pp. 111-117.)

(*Continued from p.* 174.)

MIDLAND COUNTIES.

Buckinghamshire (*continued*). — The fruit crops are, on the whole, very good, excepting Apples. During the period in which Apples were in flower the weather was very dull and rainy and also very cold, with east winds. The result is that the Apple crop suffered. The crops of Plums on east and west walls are much heavier than those on south walls, and the trees generally are free from blight. Strawberries have been very good and we had fine berries on maiden plants. Pears and Cherries are yielding very good crops. The soil is a light loam with a clay subsoil. *William Arthur Bright, Hughenden Manor Gardens, High Wycombe.*

——The Apple crop is probably the worst within living memory. The cause of such a complete failure is not easily determined; one can only suppose it is due to the very severe frosts experienced during the flowering season. Plum trees and small fruit trees, such as Gooseberries and Currants, were badly attacked by aphis and required several sprayings to thoroughly cleanse them. In spite of this the crops were good. Strawberries and Raspberries were average crops. The soil is a heavy loam resting on clay. *G. F. Johnson, Waddesdon Gardens, Aylesbury.*

——The fruit crops are, on the whole, fairly good. Pears, Plums, Peaches, Nectarines, and all bush fruits are fruiting abundantly. The outstanding failure is the Apple crop; Apple trees, with the exception of a few early varieties, are practically bare of fruits. The trees blossomed freely, but adverse conditions, continuous rains and cold weather during the setting period ruined what promised to be a good crop. We have the lightest Apple crop here for many years. *F. Reid, Dropmore Gardens, Burnham.*

Cheshire.—The fruit crops in this part of north Cheshire are very poor after the splendid show of bloom in May. Night frosts in the first two weeks of May did a lot of damage. James Grieve and Rival amongst Apples managed to miss the frosts, and the trees are bearing excellent fruits, as also is the Rev. W. Wilks variety. Cheshire is famous for its Damsons, but since the glut in 1914 there has only been one year when there was anything like a full crop. Many smallholders in this district grow considerable quantities of soft fruits for the Manchester market, but this year they had poor results, Raspberries and Black Currants being very unsatisfactory. *C. E. Ardern, Lymm, Cheshire.*

——The early Apple and Pear crops are equal to the average, but the flowers of the later varieties were damaged by the frost in May. Raspberries met the same fate. All kinds of fruit trees and bushes flowered very freely. Our best cropped Apples are Worcester Pearmain, James Grieve, Kerry Pippin, Newton Wonder, Irish Peach, Cellini, Ecklinville Seedling and Warner's King. Other varieties, especially the late sorts, are lightly cropped. Our best cropped Pears are Louise Bonne of Jersey, Marie Louise d'Uccle, Conference, Williams's Bon Chrétien, Beurré de Capiamont and Pitmaston Duchess, all of which are carrying good crops of clean fruits. Plums are poor, Morello Cherries are good, Gooseberries and Strawberries were splendid, Black and Red Currants were an average yield; the small fruits were attacked by green fly, and notwithstanding repeated syringings it was difficult to keep the foliage healthy. The cold weather in May checked the growth and made the young foliage an easy prey to aphis. *James B. Allan, Tirley Garth Gardens, Tarporley.*

——We are again experiencing the disappointment of a very meagre fruit crop. The cold rains in May were followed by several very cold mornings, even up to the 6th of June, when we registered 8° of frost. This is the fourth successive year that I have had to render you practically the same report, yet in spring everything was promising well, especially as the wood was well-ripened. *Alfred N. Jones, Marbury Hall Gardens, Northwich.*

——The fruit crops in this part of Cheshire are almost a failure owing to 12° of frost on May 12. On May 11 there was a heavy rain storm, and during the night following frost occurred and practically stripped the trees and bushes of all fruits; even Rhubarb was frozen down to the ground. This happened after very mild and warm weather in April and part of May. Following this, on June 12, we had a hailstorm; the hail was, in places, twelve inches deep, which cut Strawberry and Raspberry leaves to ribbons. *J. Atkinson, Torkington Lodge Gardens, Hazel Grove, Stockport.*

(*To be continued.*)

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* *A Handbook of Flowering Trees and Shrubs for Gardeners.* By R. C. Notcutt. Edited by the late W. R. Dykes. London: Martin Hopkinson and Co., Ltd. Price 12/6 net.

FRUIT GARDEN.

LATE GOOSEBERRIES.

What can be more delicious in October and November than a dish of ripe Gooseberries ? I certainly prefer them to second-rate Grapes. They are easy to grow, and yet how seldom we see them at the time mentioned. I was chosen by the proprietor of a large establishment to manage his garden because I was supposed to be skilled in Grape-growing, though actually at the time I had only ten months' experience with Grapes, though I had served eighteen years in three well-known establishments, mostly with bedding plants. After becoming fairly successful with Grapes, I found that my employer, though proud of showing his Grapes to visitors, had actually for his own consumption a preference for the more plebian Gooseberries, and, personally, I also have a leaning that way.

Many may be surprised to know that Gooseberries may be kept until November. To protect them from birds I put up some rough posts and rafters half way along the north side of a five-acre, walled-in garden, making a lean-to structure, ten feet or twelve feet wide, which was covered with wire-netting. This was planted chiefly with the variety Warrington, which has drooping branches and medium-sized, red fruits, which, when fully ripe, are delicious.

I made one mistake, against which I will guard my readers. The netting was a fixture ; it protected the buds in winter from the birds, and also the fruit when ripe. But there is a time between these two periods, when some kinds of birds are welcome and should not be shut out.

The garden alluded to adjoined a wood, and birds were very numerous. The Cuckoo is especially fond of the Gooseberry caterpillar. One season a young Cuckoo found its way into the enclosure when the door was open and lived there until September, when there were no more caterpillars, and it was ultimately starved. I mourned the loss of my friend and blamed myself for not having allowed it to emigrate with its kindred.

In addition to Gooseberries, I had Red Currants and White Currants, as well as Morello Cherries very late in the season ; the last, in November, are not too acid for some palates.

I may mention that the wire-netting affords considerable protection against frost and cold winds, and possible helps, by its slight shading to delay the ripening period.

With regard to Gooseberry bushes that are not protected by netting, I have found that the caterpillar is not much of a migrant, and if a new plantation is made of clean stock, one hundred yards from infested bushes, these may remain immune for some years. Cuttings may be used from infested stock, but not plants. *William Taylor*, 18, *Grove Street, Bath.*

RENOVATING VINES.

The operation of lifting the roots of vines and replanting them afresh in a sweet, suitable compost is necessary when the vines show signs of weakness owing to old age. Top-dressing vines annually with a mixture of rich loam, bone-meal, wood-ash, etc., greatly assists them in forming healthy roots near the surface, and this, together with liquid manure and other nourishments supplied at intervals during the summer when the vines are in full growth, will greatly assist in the production of good crops of Grapes for several years. When these repeated dressings fail some other means must be adopted, and if it is not desired to destroy the old vines and replant young ones, root lifting and replanting is the best means to adopt.

It is wonderful what may be done with the roots of aged vines, and how quickly they respond when the work is done carefully at the proper time. I have, on several occasions, lifted the roots entirely, drained and renewed the borders, with excellent results.

If it is decided to lift the roots and renew the border this season, the first consideration is to get sufficient soil prepared in readiness. This should consist of sweet, fibrous loam taken, for preference, from a pasture field that has been well-grazed by cattle and stacked for twelve months. To every ten loads of this soil should be added one load of wood-ash, two loads of old brick mortar and lime rubble, one of sweet decayed manure, three hundredweights of crushed bones, one hundredweight of bone-meal, and a moderate quantity of vine manure.

When the soil of the border is moderately dry, open a trench two feet deep right along the border at the furthest point from the main stems and gradually clear away all the old soil, taking every care of the roots as the work proceeds. Having removed all the old soil, trim the damaged ends of the roots and commence to put the drainage in order. When this is done, refill the trench with the fresh compost. Plant the roots at various depths and angles. It is a good plan, when relaying the long, bare roots, to make incisions at intervals along them, when a number of fresh roots will probably develop and take possession of the new soil. Having re-made and planted the border, give it a liberal watering to settle the soil. If the border is outside and should the weather prove very wet, means should be adopted to prevent the soil from getting soddened, either by covering it with strawy litter or mats. When the vines are lifted early and the foliage is still green, they should be well syringed twice daily in bright weather and the house kept rather close and shaded for a couple of weeks or so, after which air should be admitted more freely until the leaves have all fallen.

Pruning should be done at the usual time, and if a few fresh rods can be introduced and encouraged to extend and the laterals allowed to grow freely for a time after they have started into growth in spring, it will greatly assist in the reformation of new roots. It is also advisable after lifting the roots of aged vines entirely to crop them lightly the first season ; the berries should then be large, of good quality and finely finished. October and early in November is a good time to lift and replant old vines. Some years ago, I lifted Muscat vines early in October, taking up the roots entirely and fully renewed the border, with excellent results far exceeding my expectations.—*H. Markham, Wrotham Park, Barnet.*

VEGETABLE GARDEN.

POTATO YIELDS.

I recently lifted a number of varieties of first-early and second-early Potatos, and give the yields of the respective varieties below. The soil of my garden is a medium, fairly well-drained loam, and the position is sheltered. During the winter prior to planting the ground was dressed with farmyard manure at the rate of twenty-four tons per acre and at planting time a mixture of the following chemical manures was applied at the rate of one ounce per yard run of drill : superphosphate, four parts, sulphate of ammonia, one part, and sulphate of potash, one part. For the purpose of yield determination a unit area of twenty-five square yards was fixed. Following are the returns :—First-early varieties : Di Vernon (immune), 63 lb. ; Immune Ashleaf (immune), 54 lb. ; Dargill Early (immune), 35½ lb. ; May Queen (non-immune), 66 lb. ; Midlothian Early (non-immune), 67½ lb. ; Sharpe's Express, (non-immune), 73¼ lb. ; Epicure (non-immune), 70 lb. Second-early Varieties. — Arran Comrade (immune), 84 lb. ; The Ally (immune), 88½ lb. ; Catriona (immune), 92 lb. ; Ardneil Rose (immune), 86 lb. ; Ben Lomond (immune), 95½ lb. ; Great Scot (immune), 103 lb. ; British Queen (non-immune), 88 lb. ; Edinburgh Castle (non-immune), 92½ lb.

So far as first-early Potatos are concerned, the great need of the moment would seem to be the introduction of good-shaped, heavy yielding varieties that are immune to wart disease. Di Vernon, the most successful immune variety in my collection, returns a lower yield than May Queen, the least successful of the non-immune varieties.

I cannot offer a word of praise for the variety Dargill Early. It is not worthy of it. The tubers are an ungainly shape and the yield is very poor. The other varieties proved in every respect worthy of planting. Growers need not cultivate a non-immune, second-early variety. Catriona is an excellent cropper and fairly resistant to late blight. The tubers of Ben Lomond are of excellent shape and as clean as a new pin. Great Scot is a reliable heavy cropper. With the exception of Epicure, Arran Comrade, The Ally and Great Scot, all the above varieties develop kidney or oval-shaped tubers. *Geo. H. Copley, N.D.H.*

HOME CORRESPONDENCE.

The Dahlia.—I was interested in the remarks by *Veritas* on p. 155. There are so many beautiful varieties of bedding Dahlias, both dwarf and tall, that there can be no excuse for planting unsuitable sorts. Undoubtedly the Cactus section is the most admired. They are so well-shown at our leading exhibitions that they are the centre of attraction at Dahlia shows. Those who are not conversant with the habit of the plants order these Cactus Dahlias in the belief that they will get similar flowers on their plants in the garden, but the majority are disappointed in this respect. I have repeatedly voiced my opinion at meetings of the National Dahlia Society that all Dahlias should be shown as grown. That does not mean that the fine varieties of Cactus Dahlias which we have to-day and which have taken many years of patient labour to evolve should be dropped. If these Dahlias are shown it should clearly and legibly stated on the entry card that the blooms are artificially supported. There are many effective bedding varieties in the Cactus section. Unfortunately, many who judge in these classes are not sufficiently conversant with the habits of the plants and it should be made a condition that the varieties should be shown as grown. *Fred G. Treseder.*

Testudinaria Elephantipes.—Both male and female inflorescences of Testudinaria Elephantipes have developed in this nursery. The individual blooms are insignificant, but I do not remember seeing the plants in flower before. *A. E. Seaward, Moss Lane Nursery, Romford.*

Abelia Schumannii.—This new Chinese introduction, a good illustration of which appeared on p. 63 of *The Gardeners' Chronicle*, has so far proved a most satisfactory shrub in this garden. Commencing to bloom at the end of June, there are still quantities of flowers on the spreading, somewhat pendulous branches, and I have no doubt but that a succession will be maintained until well into autumn. These blossoms, in shape like those of a Pentstemon, are larger than those of most Abelias, and the colour, a fresh pale lilac sharpened by just a hint of blue, is exceedingly attractive and distinct from that of any other kind. Appearing in the first place from the joints of the young wood, the blooms of the later season are yielded on short, lateral growths, and this not only makes for a much longer flowering period than is usual in Abelias but the shrub will carry a crop of extraordinary abundance. A. Schumannii will, moreover, flower when no more than a few inches high, so that cuttings in their first season make pretty little plants. I find that this species will do well in any average loam, with or without lime, but a sunny aspect is desirable. It may be grown in a bold part of the rock garden as well as in a mixed border, and for the colder parts of the country it should make an attractive wall subject. The foliage is evergreen ; the oval-pointed leaves are glossy, often tinted with a bronzy flush, and rather more than an inch in length. Cuttings strike very readily in a cold frame during the later summer. *A. T. Johnson, Ro-Wen, Talycafn, Conway.*

SOCIETIES.

SOUTHPORT FLORAL FÊTE.

(Continued from p. 179).

Fine, but breezy, weather favoured the opening of the Southport Show on August 25. Judging commenced so early as 8.15 a.m., and the forty judges had to keep busy to complete their duties by the time the Mayor, Alderman Hadfield, opened the exhibition at 10.30 a.m. The attendance appeared to be very large, even for the opening day, and it was obvious that at Southport, as elsewhere, "nothing succeeds like success." The takings at the close of the second day were rather more than equal to the whole takings for the three days in 1925, while the total result was about £1,500 better than last year. Fine weather favoured the proceedings and at no time was it warm enough to make the interior of the tents uncomfortable for the thousands of people therein.

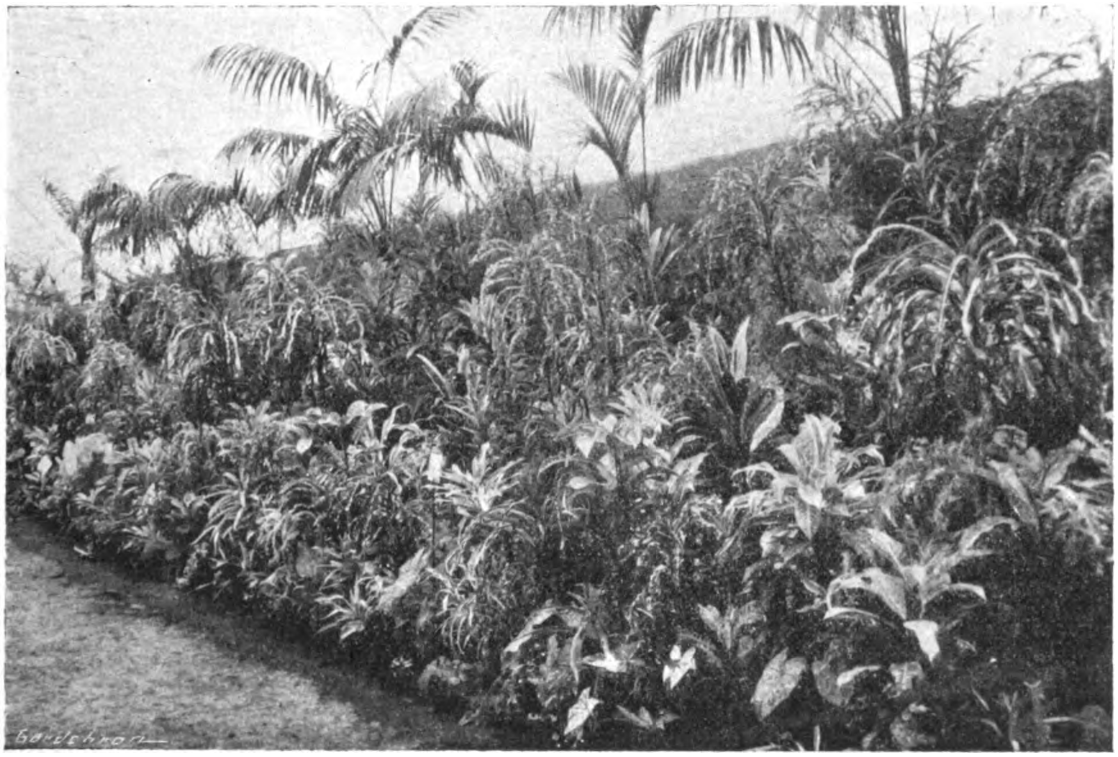

FIG. 96.—SOUTHPORT SHOW: GROUPS OF FOLIAGE PLANTS; MR. W. E. HOLMES' FIRST-PRIZE EXHIBIT IS ON THE LEFT AND MESSRS. J. CYPHER AND SONS' SECOND-PRIZE EXHIBIT IN THE FOREGROUND.

Once more we congratulate the Southport authorities on their enterprise and their exceeding kindness and hospitality to everyone concerned. The Mayor, Mr. Hadfield, held a reception for the judges on the eve of the Show, and he presided at the luncheon given to the judges and leading exhibitors on the opening day of this "Chelsea Show of the North."

We should be entirely failing in courtesy if we did not acknowledge our indebtednes to Mr. E. Clayton, Mr. E. Wood, Mr. C. Aveling, Mr. G. Crankshaw, Mr. T. Wolstenholme and Mr. W. Clark for many kindnesses received at Southport.

Rock Gardens.

The rock garden class is a great attraction at Southport, where a bank of trees and shrubs provides a fine background for the exhibitors. On this occasion the specifications were as follow:—A rock or water garden, arranged on a space not exceeding 750 square feet; maximum points to be awarded as follow:—(*a*) Design, proportion and shape, 8; (*b*) simplicity, direction, continuity of main lines produced by ridges of stone, the placing of rocks and plants to convey an illusion of distance is included in this, also the design connected with any display of water, 20; (*c*) the setting of the stones, picturesque laying consistent with nature, and general quiet effect; great attention should be given to the placing of isolated stones, as this affects both "design" and setting, 14; (*d*) the proportion of each colour used in planting the rockeries, 10; (*e*) the colours chosen in planting and their relative placing in harmony with one another, 18; (*f*) skill in regard to grass-laying, careful planting, and hiding cement, background, etc., 6; (*g*) quality, suitability and rarity of plants, 24; total 100 points. It will be gathered from this specification and the fact that every exhibitor had a similar space, that competitors fully understood the basis of judgment.

The premier award, £75 in cash, and the Southport Corporation's Perpetual Challenge Trophy, valued at £100, was won for the third time in succession by Messrs. T. R. Hayes and Sons, Ambleside, with a delightful design where the central, winding, water feature consisted of a series of tiny mountain lakelets with bold rockwork in the back from whence the water emerged, and lower areas of rock towards the foreground. The planting, like the arrangement of the rocks, was restrained and yet quietly effective, and the little alpine Conifers were placed as though they had grown there for many years. The principal flowering plants were the drifts of Erica vagans var. St. Keverne, Linaria alpina, Sedum Hayesii, Daboëcia polifolia and D. p. alba, alpine Poppies, charming Violas, colonies of Campanula pelviformis, Gentiana Farreri, Primulas and hardy Ferns. Altogether this was a tasteful and satisfying picture, designed and planted with the genius of simplicity. Taking the pointing in the order as given in the specification, the first-prize exhibit secured the following points: 8, 16, 12, 9, 15, 5 and 23; total 88.

Second prize was awarded to Mr. P. Gardner, Ilkley, whose arrangement of rocks was bolder than in the first prize exhibit. There was also a series of tiny lakelets, but the lowest of these, in the immediate foreground, was the least pleasing of them. Dwarf Conifers were used most effectively and there were good drifts of Gentians, Violas, Campanulas, Spiraeas and Heaths, with a few hardy Ferns in moist and shady spots. The pointing here, following the order given, was: 7, 18, 12, 9, 14, 5 and 20 total 85.

Third prize was won by Messrs. Hodsons, Nottingham, whose pointing was 8, 19, 12, 9, 14, 5 and 17; total 84. Messrs. Maxwell and Beal, Broadstone, were awarded fourth prize for a bold design very freely and effectively planted; the points were, 8, 16, 11, 8, 13, 6 and 20; total 82. Mr. E. J. Rigg was awarded fifth prize for a simple design that pleased very many visitors; his points were, 7, 14, 10, 9, 14, 6 and 17; total 77. Mr. Karl Therkildsen's points were 7, 12, 9, 8, 12, 5 and 17; total 70. Mr. J. F. Rashley obtained 4, 11, 9, 7, 10, 2 and 16, total 59; and Messrs. W. Brown and Sons' points were, 4, 10, 6, 7, 8, 2 and 14; total 51.

Orchids.

These were better and more extensively shown than in 1925, and the section promises to become a very important one.

Messrs. J. and A. McBean again won the chief award and the Silver Challenge Trophy, presented by Councillor Hartley for the best group of Orchids, arranged on a space of twenty feet by four feet. The Cooksbridge firm had a very pleasing exhibit wherein a few of the principal plants were Laelio-Cattleya Profusion, L.-C. Warrior, Cattleya Sibyl, C. Lord Rothschild var. alba, C. Hardyana alba, C. Dowiana aurea, good forms of Odontoglossum crispum, Odontonia brugensis, Miltonia Hyeana, Dendrobium Victoria Regina, numerous Odontiodas and graceful spikes of Oncidiums.

A Silver Challenge Trophy and Gold Medal of the Manchester and North of England Orchid Society were won by the Hon. G. E. Vestey (gr. Mr. B. Collins), Birkdale, for a collection of Orchids staged on a space of twelve feet by four feet; this was a capital display and contained some fine examples of Cattleya

Hardyana alba, C. gigas, and various Odontiodas and Odontoglossums.

The Gold Medal and Silver Trophy offered for the best collection of Orchids arranged on a space six feet by four feet, were won by G. V. Llewelyn, Esq., Southport, with a fine set that included Brasso-Cattleya Ilene, B.-C. Olympus, Laelio-Cattleya Soulange, Odontoglossum grande, Cattleya triumphans, and Cypripedium Maudiae; second, Mr. J. B. Adamson; third, Mr. J. McCartney.

Mr. J. B. Adamson (gr. Mr. J. Houses), Blackpool, led for six Orchids in bloom, with Laelio-Cattleya Hassallii alba var. Evansiae, L.-C. Nancy, L.-C. St. George, Odontoglossum Whiterock, Cypripedium microchilum and a Brasso-Cattleya; second, J. M. McCartney, Esq. (gr. Mr. C. F. Potts); third, R. Ashworth, Esq., Ashlands, Newchurch (gr. Mr. Hough).

Gladioli and Carnations.

Gladioli were splendidly shown, and in the big group class, where exhibitors had to fill a space thirty feet by four feet with Primulinus varieties, the Sir Albert Stephenson Silver Challenge Cup is added to the first cash prize. There were four competitors, and together these made a gorgeous display. The coveted premier award was won by Messrs. Bees, Ltd., with finely-grown spikes tastefully arranged in baskets and bowls. Not only were the flowers well grown but they were very fresh, and in this respect ahead of their competitors. A few outstanding sorts were Souvenir, Fire King, La Leys, Maiden's Blush, Salmonea, Apricot and Margoletta; the second prize was won by Messrs. W. Artindale and Son, Sheffield, whose arrangement was a trifle crowded; they had good examples of L'Authie, Hesperia, Souvenir, Orange Queen, La Dyle and Alice Tiplady; third, Messrs. Lowe and Gibson, Crawley Down, who had a very light and pleasing arrangement.

Messrs. W. Artindale and Son were the most successful exhibitors of large-flowered Gladioli, disposed on a ground space of one hundred square feet; they had fine spikes of leading varieties and easily the best arrangement; Messrs. W. J. Garner and Son, second; Mr. P. Gardner, Ilkley, third.

Mr. Walker Samuel, Wrexham, was awarded first prize for six vases of Primulinus Gladioli, six spikes in a vase, with a grand lot that included Athalie, Gold Drop, Orange Queen, Fire Queen and Ethelyn, all finely grown; Mr. S. Richards, second. The same exhibitors occupied similar positions for six vases of large-flowered Gladioli, the premier set including splendid spikes of Veilchenblau, Dr. F. Bennett, Schwaben, Jean Fraser, Ruby and Arthur Elsom.

The only exhibit of Carnations set up on a space twenty feet by five feet was the exceptionally fine display of Messrs. C. Engelmann, Ltd., and one of the best of their many fine efforts on a limited space. The group contained lovely sheaves of Marian Wilson, Laddie, Red Laddie, Saffron, Circe, Master Michael Stoop, Cupid, and the brilliant Fancy variety, Sheila Greer. The Rowntree Silver Challenge Cup, which goes with the first prize, now becomes the property of the Saffron Walden firm, who have won it three years in succession.

Messrs. Keith Luxford and Co., led in the class for a group of Carnations, arranged on a space ten feet by four feet, and again won the Rudolf Challenge Cup; their best varieties were Tarzan, Saffron, Mikado, Lady Northcliffe, Surprise and White Wonder; second, Mr. H. Hunter, Southport.

Dahlias and Delphiniums.

Mr. H. Woolman, Shirley, Birmingham, won the Silver Challenge Cup and £25 offered as first prize for a collection of Dahlias, arranged on a space of forty feet by four feet. He made a grand display and showed Cactus varieties finely, these having wire supports as allowed by the authorities, but the flowers of all other sections were not wired. The great sheaves of splendid blooms of Ruby, J. F. Woolman, Mrs. A. T. Barnes, E. S. Jackson, Alabaster, Patriot, Canary, F. W. Fellows and Ballet Girl, were very effective, while, in addition, there were fine groupings of such large decorative sorts as Berengaria, Ellinor Vandeveer, Mrs. E. Cant, Mrs. H. Drusselhuys and the vivid scarlet Firefly. Pompon, bedding, Collerette and other varieties were grouped along the front of the exhibit.

Messrs. Jarman and Co. were awarded the second prize for an attractive exhibit in which Cactus varieties figured prominently. Messrs. W. Treseder, Ltd., Cardiff, included a fine stand of the old Show varieties in their third prize exhibit, where no flower, Cactus or otherwise, was provided with artificial support.

Messrs. Bees, Ltd., showed the best collection of Delphiniums, arranged as a ground group; Nora Ferguson, Willy O'Breen, Jeannie Jones and Persimmon were leading varieties shown with numerous seedlings; second, Messrs. Hewitts, Solihull.

Violas and Pansies.

In the cool midland and northern counties Violas and Pansies are cultivated extensively for exhibition purposes, and the old florists' ideas of form and markings are still favoured. Both these flowers were shown largely at Southport.

Messrs. Clay and Sons' Cup, offered for the best display of Pansies and Violas on a table space eight feet by three feet, together with a Silver Medal of the National Pansy and Viola Society and a cash award of £5 constituted the first prize, and were won by Mr. H. J. Milner, Handsworth, with a fine lot of flowers arranged in small tubes set in arches and stands of varying size and style; second, Mr. E. Clegg, Dewsbury.

Mr. A. F. Holbrook, Harborne, Birmingham, showed the best dozen vases of Violas, distinct, nine blooms in each vase; he was followed in order by Mr. A. Harris, Steel Bank, Sheffield, and Messrs. Sanderson and Upton, Sheffield, all of whom showed fine collections of excellent flowers.

Fancy Pansies, in sets of forty-eight blooms, staged on boards, received the full attention of fanciers, whose interest centred chiefly in the first and second prize sets of fine blooms shown by Mr. J. S. Jackson, and Mr. T. Denton, Dewsbury, respectively. Mr. J. S. Jackson, Stockport, also secured the principal award for forty-eight blooms of Violas, distinct varieties, followed by Messrs. Sanderson and Upton.

Mr. Henry Bairstow, Bradford, was particularly successful, winning the first prize and Gold Medal for twelve vases of Violas, six blooms in a vase, showing excellent blooms of Mrs. A. Stevenson, Annie Hamilton, Elsie Johnstone, Malcolm Milner, Lily Stark and John Adamson; second, Messrs. Sanderson and Upton. Mr. Bairstow also won first prize for two dozen Viola blooms, staged on boards, both in the open and in the amateurs' sections.

Mr. H. Robertson, Kelty, Fife, showed the best new seedling Viola named Mrs. Henry Robertson; this has a creamy-yellow ground and an edging of soft blue. A Gold Medal was also awarded to this new variety.

Sweet Peas.

Sweet Peas were not of exceptional quality, but quite good for so late in the season.

Mr. J. A. Grigor, Banff, led for a dozen bunches of Sweet Peas, thereby winning the Rayner-Batty Challenge Cup and the Silver Medal of the National Sweet Pea Society; among other sorts, he had capital blooms of Ivory Picture, Hebe, Powerscourt, Elegance, Radiance and Grenadier; second, Mr. Thomas Berwick, Knutsford.

Messrs. Herd Bros., Penrith, again won the Thomson Challenge Cup and first prize for a display of Sweet Peas, filling a space twenty feet by four feet. Considering the season and time of year, they had a very meritorious display.

Messrs. Bolton and Son's prizes for six vases of Sweet Peas were won in the order given, by Mr. J. A. Grigor, Mr. C. Richards and Mr. J. Marsden, Darwen, while Mr. Eckford's prizes for a similar collection were won by Mr. S. Richards, Wrexham; Mr. J. A. Grigor and Mr. W. Weaver, Mold, respectively.

Floral Decorations.

The competition in the classes for table decorations was unusually keen. In the class where the selection of flowers was left entirely to the discretion of the exhibitor there were fifteen entrants, and here Mr. M. Stather, Cottingham, Yorks, led with a rich design carried out with Odontiodas, Odontoglossums, Cattleyas and Vandas: the Cattleyas were used at the base of the receptacles and the spikes of Odontiodas and Odontoglossums were gracefully disposed above them; second Mrs. J. Nixon, who showed richly-hued Roses in brown bowls; third, Mrs. L. Colston Hale, who also used brightly-coloured Rose blooms and suitable Rose foliage.

The table decorations of Pansies and Violas were far prettier than might be imagined. Mrs. Nixon won first prize with a very charming design of blue, violet and yellow flowers, and she used blooms of various sizes and associated them with Selaginella and Japanese Maple foliage; second, Mr. H. J. Milner; third, Mr. S. Warren, Darwen. Some of the unplaced exhibitors in this class had exceedingly formal designs.

Messrs. Isaac House and Son showed the best bowl or basket of hardy flowers and, of course, used their new varieties of Scabious; these beautiful flowers were associated with double Gypsophila; second, Mrs. W. Sharpe, with Golden Ophelia Roses; third, Mr. M. Stather, with yellow and orange Primulinus Gladioli.

Somewhat unusual was the class for a table decoration of Dahlias, but the competition was nevertheless keen; the premier award was made in favour of Mrs. Blair, who had a bright design in Coltness Gem Dahlia; second, Miss Holmes, with pale pink decorative flowers; third, Mrs. Emmett, Lancaster, also with the variety Coltness Gem.

The contest was keen for the prizes in the open class for a dinner table decoration of Sweet Peas. There were a dozen entries, and the first prize was won by Mrs. J. Nixon, Alderley Edge, for pink Sweet Peas associated with slender sprays of variegated Japanese Honeysuckle; second, Mrs. Colston Hale, with pink flowers, and Miss Holmes, Chelsfield, third, with deep pink flowers.

Mrs. Courtney Page, Earldoms, Enfield, led in the open class for a table decoration of flowers other than Sweet Peas and Dahlias, and she used Golden Ophelia Roses; second, Mrs. Blair; third, Mr. H. F. Wilson, Southport; fourth, Miss Newsham.

Messrs. Campbell and Son, Southport, were most successful in the class for a collection of floral designs wherein an arrangement of Lilium speciosum rubrum was very pleasing; second, Mr. M. Stather, Cottingham; third, Messrs. W. J. Garner and Son. Mr. Stather led for a hand bouquet, and Mr. W. Sharp for a basket of flowers, with a design in yellow Primulinus forms of Gladioli.

Decorated Table of Fruit.

In this attractive class there were three competitors, each of whom had to arrange a collection of twenty-four dishes of fruit in not more than nine distinct kinds on a table measuring ten feet by four feet—not more than twelve bunches of Grapes allowed in not fewer than four varieties. The first prize consisted of the Silver Challenge Trophy presented by the Southport Hotels, and £30 in cash. The premier award was won by the Duke of Newcastle (gr. Mr. S. Barker), Clumber, Worksop, (188½ points), who showed a fine collection (Fig. 98), charmingly decorated with salmon-pink Carnations and sprays of Francoa ramosa. The Grapes, well-coloured, were Muscat of Alexandria, Madresfield Court, Black Hamburgh, and Appley Towers; the other dishes were of

Peregrine, Frogmore Golden and Dymond Peaches; Triomphe de Vienne, Dr. Jules Guyot and Marguerite Marillat Pears; Golden Transparent Gage Plums; Cox's Orange Pippin and Ellison's Orange Apples; Brown Turkey Figs; Humboldt and Dryden Nectarines, and King George Melons.

The second prize of £25 was won by **EARL BALFOUR** (gr. Mr. G. F. Anderson), Whittinghame (183½ points), who had very fine dishes of Souv. de Congres and Marguerite Marillat Pears; Cox's Orange Pippin and Washington Apples; and Director Tisserand Grapes. Third prize went to **LORD BELPER** (gr. Mr. J. McCartney), Kingston Hall, Derby (153 points), who had very big specimens of Sea Eagle Peaches and Wealthy Apples.

GRAPES.

From among six competitors the **DUKE OF NEWCASTLE** led for twelve bunches of Grapes, winning therewith the Hadfield Silver Plate and the cash award of £25. The collection was a very even one, the bunches of fair size and the berries good. The varieties and the points awarded were as follow (the possible points are in brackets):—Chasselas Napoleon (9), 8 and 8½; Muscat of Alexandria (11), 9½, 9, 9 and 9; Black Hamburgh (10), 8½ and 8½; Madresfield Court (10), 8, 8, 8½ and 8; total, 102½ points.

Mr. S. **GORDEN**, Monreith Gardens, came second, with heavier bunches but not so well coloured; his varieties were Muscat of Alexandria, 7½, 6, 7½ and 5½; Alnwick Seedling (9), 8½ and 7; Black Hamburgh, 7½, 8, 7½ and 7½; Prince of Wales (10), 8½ and 8½; total 89½ points; third, the **KIPPEN VINEYARDS** Co., Kippen with 84½ points, the set including good bunches of Alicante; fourth Mr. **HENRY BIGG**, Assonbank Gardens, Ascog, Isle of Bute, with 84 points; this set consisted entirely of black Grapes.

VEGETABLES.

Vegetables constituted a large section of the show, and although there were plenty of excellent dishes and numerous good collections, there was room for considerable improvement in the arrangement of collections.

In the open class for a collection of twelve distinct kinds of vegetables, the first prize was £10 and a Gold Medal, and this was won by **VISCOUNT HAMBLEDEN** (gr. Mr. Turnham), Henley-on-Thames, with a fine exhibit wherein Leeks, Onions, Cauliflowers, Parsnips, Runner Beans, Celery, Tomatos and Beet were especially good; second, Mr. **JAMES GIBSON**, Welbeck Gardens, Worksop, who ran Mr. **TURNHAM** closely.

Messrs. J. Carter and Co.'s chief prize for six kinds of vegetables was won by Mr. W. **ROBINSON**, Sunny Bank, Garstang, who had fine Onions and Leeks; second, Mr. F. **EMMOTT**. Mr. J. **MILLS**, Shavington Gardens, Market Drayton, won the leading prize offered by Mr. J. **CLUCAS** for four kinds of vegetables.

Dr. **ROY**, Royal Mental Hospital, Cheadle, led in Messrs. Clibran's class for nine kinds of vegetables; second, Mr. D. P. **COOK**, Mold. Messrs. Sutton and Sons' chief prize for nine kinds was won by **VISCOUNT HAMBLEDEN**. In Messrs. E. Webb and Sons' class, Mr. J. **PINNER**, Cadishead, and Mr. F. **EMMOTT** were placed equal first.

NATIONAL ROSE.

(*Continued from p.* 179.)

TWENTY-TWO classes were provided in the schedule of the National Rose Society's Jubilee Provincial Show, held at Southport. The competition was quite keen in some of the classes and the show a great success. Even on the second day the majority of the blooms looked well, and only in a few cases were they hopelessly faded.

CERTIFICATES OF MERIT.

Sir D. Davis.—A H.T. variety of rich rosy-crimson colouring; it appears to be rather thin and soon shows its golden stamens.

Portadown Yellow.—A pretty H.T. Rose of lovely golden yellow colour, with deeper, orange-yellow suffusion at the base of the petals. The foliage is dark and the variety looks suitable for bedding.

Patience.—The broad petals of this variety are deep rose-pink with a deep salmon suffusion at the base. When the flower is wide open a white mark is seen on some of the petals. The buds are of excellent shape. These three varieties were shown by Messrs. **S. McGREDY AND SON**, Portadown.

Mrs. G. A. Wheatcroft.—A soft pink Rose of considerable beauty, but the blooms have few petals. Shown by Messrs. **WHEATCROFT BROTHERS**.

NORTHERN NURSERYMEN'S CLASSES.

In this section only those traders were allowed to compete whose nurseries are north of an imaginary line drawn across Great Britain from Spalding to Abersystwyth.

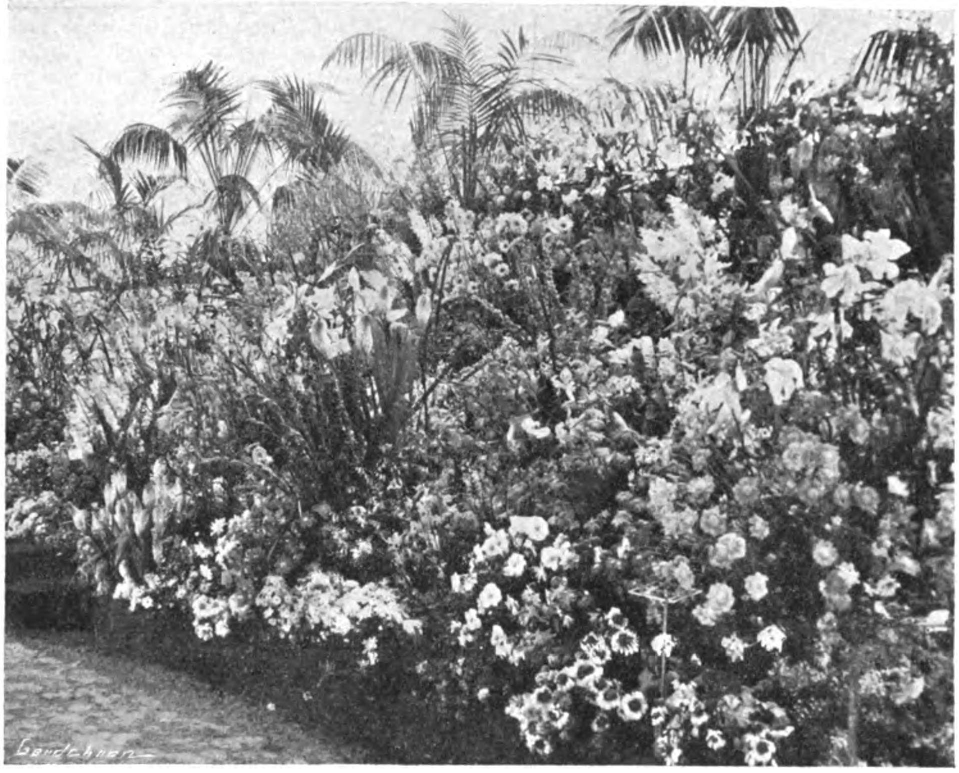

FIG 97.—SOUTHPORT SHOW: BANKS OF HARDY FLOWERS. MESSRS. BEES' GROUP IN THE FOREGROUND.

(see p. 179).

The principal class was for a representative group of cut Roses arranged on a space forty feet by four feet, and not to exceed seven feet in height above the staging. The premier award of £20 was won by Mr. C. **GREGORY**, Chilwell, with a pleasing exhibit consisting of very effective pillars and baskets of fresh flowers of such attractive varieties as R. E. West, Mrs. Dickson Hamil, Shot Silk, Mabel Morse, Lady Roundway, of very fine colour, Emma Wright and Ellen Poulson; second, Messrs. **BEES, LTD.**; third, Messrs. **WHEATCROFT BROS.**

For a display of Roses on a space twenty feet by four feet, Mr. T. **ROBINSON**, Nottingham, scored with one of his finely-arranged displays, and again won the Commercial Travellers' Trophy. He had capital flowers of Independence Day, Madame Butterfly, Donald Macdonald, Mrs. Wemyss Quin, Col. Oswald Fitzgerald, Emma Wright, Golden Emblem and Golden Ophelia. This was a very bright and attractive exhibit. Mr. **ROBERT WRIGHT**, Formby, won the second prize.

Messrs. **WHEATCROFT BROS.** won the first prize for three baskets of cut Roses, but alas! their varieties were unnamed; second, Messrs. **THOMAS SMITH AND SONS**, with Betty Uprichard, Ophelia and Mrs. H. Morse.

Mr. **SANDY DICKSON**, Dundonald, Co. Down, led for twenty-four blooms, distinct, on boards, and showed capital specimens of Candeur Lyonnaise, Rev. Page Roberts, Capt. Kilbee Stuart and Marjorie Bulkeley, the last-named winning the Silver Medal for the best bloom shown by a nurseryman; second, Messrs. **THOMAS SMITH AND SONS**, Stranraer.

SOUTHERN NURSERYMEN'S CLASSES.

In this section competitors' nurseries had to be south of the afore-mentioned imaginary line.

In the corresponding large group class, Mr. **ELISHA J. HICKS** won the first prize and the Winterbottom Challenge Cup with a grand display wherein the Polyantha varieties Edith Cavell, Mrs. Wm. Cutbush, Glory of Hurst and Coral Cluster were used to fill the pillars forming the background, while bold groups of Independence Day, Souv. de Claudius Pernet, Souv. de Georges Pernet and Emma Wright were placed in the foreground.

In the smaller group class Mr. **GEORGE PRINCE** led with an effective exhibit in which the leading feature was the large stands of Golden Emblem, Lady Inchiquin, Los Angeles, Irish Elegance, Madame Butterfly and fruiting sprays of Rosa Moyesii; second, Mr. G. **MATTOCK** who disposed good blooms in bouquet form.

Mr. J. **MATTOCK** secured first place for three baskets of decorative Roses, not more than three dozen stems of a variety, with bright flowers of Mabel Morse, Mrs. H. Bowles and Lady Inchiquin; second, Mr. H. **DREW**, who showed the same varieties.

Mr. H. **DREW** was the most successful exhibitor of two dozen exhibition blooms, and some of his best varieties were Los Angeles, Souv. de Claudius Pernet, Mrs. H. R. Darlington and W. Shean; second, Mr. **GEORGE PRINCE**.

Amateurs' Classes.

Mr. G. **Marriott** won the first prize for a representative group of Roses, with a very attractive exhibit wherein he showed bright, fresh examples of K. of K., Golden Emblem, Los Angeles, Hawlmark Crimson, Hoosier Beauty and Mabel Morse; the narrow, trough-like tin along the front of the group detracted somewhat from the effect of the display; second, Mr. C. **Dixon**; third, Mrs. **Barton**, Chappel, Essex.

The best set of twelve Roses, distinct, came from Mr. J. E. **Royer**, Worcester, and it contained fine blooms of Candeur Lyonnaise and Mrs. Lamplough; second, Mr. H. **Mitchell**; third, Mr. C. **Dixon**. Mr. C. **Speight** won first prize for a dozen blooms in not fewer than eight varieties, and his specimen of George Dickson was awarded the Silver Medal as the best bloom shown by an amateur; second, Mr. C. **Severs**, Dalton-in-Furness.

Lyon Rose, as shown by Mr. J. N. **McEvoy**, Horwich, Bolton, won the first prize for six blooms of one variety, while for a basket of exhibition Roses, twelve blooms, Mr. C. **Dixon** led with Gorgeous; Mr. H. **Mitchell** second, with George Dickson; Mr. G. **Speight** third, with Augustus Hartmann.

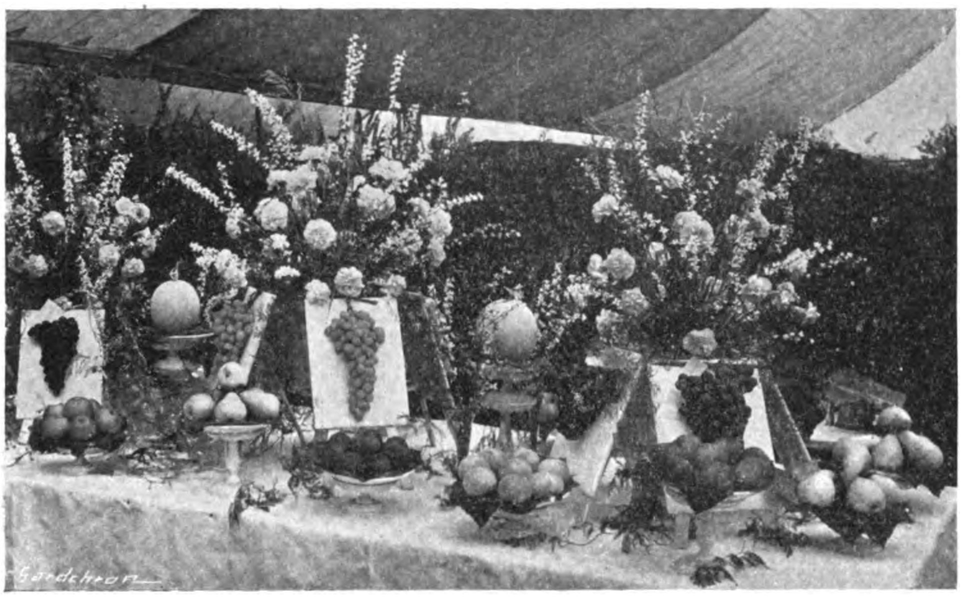

FIG. 98.—SOUTHPORT SHOW: FIRST PRIZE DECORATIVE FRUIT TABLE, EXHIBITED BY THE DUKE OF NEWCASTLE (GR. MR. S. BARKER.)

In the local classes, Mr. R. **Battersby** beat Mr. J. T. **Lambert**, Ainsdale, for six blooms distinct, and also led with six blooms of any variety or varieties, and with six blooms of any one variety. Mr. **Brookfield** was awarded the first prize for three vases of Rambler Roses, with a poor set.

Decorative Classes.

Although many of the table decorations of Roses were heavy there were a fair number of pleasing designs where colour and grace combined. Mrs. **Courtney Page** led with a set of low bowls of Emma Wright Roses, the small corner arrangements being very pretty; second, Mrs. **Colston Hale**, who used bright blooms and sprays of dark foliage; third, Miss A. **Newsham**, Aughton, with soft salmon-pink flowers; fourth, Mrs. A. J. **Blair**, Mossley, with Ophelia.

Mrs. **Courtney Page** was also the most successful exhibitor of a bowl of Roses, winning with a low, broad design of Golden Ophelia associated with sprays of Rosa rubrifolia; second, Mrs. **Charlton**, with Madame Butterfly, in a slightly stiff arrangement; third, Mrs. A. J. **Blair**, with Independence Day. There were nine entries. The prizes for a basket of Roses were awarded to Mr. J. N. **Hart**, Mr. C. **Dixon** and Mr. H. **Mitchell**, respectively.

Miss A. **Newsham** scored in the class for a vase of Roses, with Madame Butterfly, and was followed in order by Mrs. **Oakley Fisher**, with Roselandia, and Mrs. **Courtney Page**, with Betty Uprichard.

In the open class for a bowl of Roses, Mr. J. **Mattock** came first, with Miss **Colston Hale** second, and Mr. H. **Drew**, third.

HIGHLAND HORTICULTURAL.

August 20.—The Market Hall, Inverness, never housed a finer show than that held on the above date by this Society. It was the finest lot of flowers, fruit and vegetables one could wish to see and reflected the highest credit on all concerned. The general arrangements were made by Mr. D. H. MacNeill, Secretary and Treasurer, to whose fine organising ability warm tribute was paid from the platform.

Pot Plants.—The entries here were remarkably good. In the class for six table plants (foliage), the Hon. Mrs. **Smythe**, Ness Castle (gr. Mr. Ross), led. Ferns were well shown, those from Muirtown (gr. Mr. Tarn) being awarded first prize, while from the same gardens, came the best greenhouse plants, Begonias, single and double Fuchsias, Pelargoniums, Coleus and the best six plants in bloom. From Ness Castle gardens came the best Carnations, and Mr. **William MacKay**, Craigmonie (gr. Mr. Charles Cowper), showed the best Palms. Mr. J. H. **Smith**, Summerfield, had a fine win in the class for hanging baskets.

Cut Flowers.—As usual, this section formed a specially attractive feature of the show. An outstanding feature here was the fine, well-grown flowers sent from Brodie Castle (gr. Mr. John M. Annand). These entries took chief honours for hardy herbaceous flowers, Roses, Chrysanthemums, Gladioli, Stocks and Pansies, and this exhibitor likewise had the best bowl of flowers, excluding Roses and Sweet Peas. The Sweet Peas grown in the north this season and, in fact, every season, are always a source of admiration to southern growers; so good, in fact, that the southern growers prefer to stay at home and take no competitive risks. The entries from Darnaway (gr. Mr. A. Dow) formed a superb collection, just as they did at the Scottish National Sweet Pea, Rose and Carnation Society's show at Elgin the previous day. There Mr. Dow was beaten by Mr. John A. Grigor, Banff, by the narrow margin of three points. Needless to say, the Darnaway specimens proved a great attraction. The Hon. Mrs. **Smythe**, Ness Castle (gr. Mr. Walter Ross), had matters pretty much her own way for Roses, Chrysanthemums, Border Carnations, Pentstemons and hand bouquets. Colonel **Macpherson**, Milnefield (gr. Mr. Hugh Fraser), showed the best Dahlias, while Mr. W. J. **Shaw**, Ardchattan, showed the finest Violas, and Mrs. **Stuart Watson**, Altnaskiach, the best Phloxes.

Fruit.—The season was, perhaps, too late for Raspberries, Strawberries, Currants and Gooseberries, and early enough for Apples and Pears, but nevertheless, the entries forward in this division were remarkably good. For black varieties of Grapes Colonel **Macpherson**, Milnefield, and the Hon. Mrs. **Smythe**, Ness Castle, divided the honours, while of white Grapes, those from Ness Castle were the best. Darnaway (gr. Mr. A. Dow) had numerous fine entries taking premier honours for scarlet and green Melons, Apples, Red Currants and Cherries. From Ness Castle came the best Peaches, Gooseberries Currants and Raspberries. Eilenreach provided the choicest Nectarines, Muirtown the best Plums, and Brodie Castle the best collection of fruit grown in the open (six sorts), and Strawberries.

Vegetables.—The quality shown in this division was exceptionally good, and, what was still more pleasing, the honours were widely distributed. Mr. R. L. **Mackintosh**, of Inshes, exhibited the best Peas and Cabbages; Mr. **Charles Tinker**, of Kilmartin, led for Celery, Carrots, Leeks, and Onions; Kilravock for Tomatos, and Craigmonie for Lettuces. Potatos made a fine display; Mr. W. J. **Shaw** Ardchattan, had the best entry, followed by exhibits from Brodie Castle and Kilravock. From Brodie Castle also came the leading Beetroots and Turnips.

In the amateur section some meritorious exhibits were forthcoming, the most successful exhibitor being Mr. W. J. Shaw, Ardchattan, who won, for the second year in succession (with a handicap of ten points), the Lady Invernairne Challenge Cup. The chief features in the plot-holders' section were the fine Carrots, Turnips, Potatos and Parsley.

Non-Competitive Exhibits.

As is usual at Inverness, the local seedsmen and florists had very attractive displays for exhibition only. Messrs. **Mackinnon**, Church Street, F. **Urquhart and Co.**, Union Street, and **Howden and Co.**, staged greatly admired displays. Messrs. **Austin and McAslan**, Glasgow, showed fine Roses and Gladioli.

SANDY HORTICULTURAL.

Sandy and District Floral and Horticultural Society's fifty-third annual exhibition was held on August 26, in the park of Sandye Place, by kind permission of Mrs. Graves.

The exhibition was favoured with glorious weather, and the attendance was estimated at over 15,000, an increase of 3,000 over the previous year. The exhibits were of a very high standard. The following is a list of some of the principal awards in the horticultural section.

For a group of hardy herbaceous flowers arranged for effect on a space of twenty feet by eight feet, Mr. **Forsyth**, Luton, was placed first, with a most meritorious group; second, Messrs. F. **Chillery and Son**. For a collection of cut Roses, arranged for effect on tabling four feet wide and not to exceed fifteen feet, Messrs. **Harkness and Co.** were placed first; second, Mr. J. **Rigg**. The same firm was placed first for forty-eight Roses shown on boards;

special mention may be made of the varieties Louie Crette and Lady Dickson Hartland.

Dahlias were again a great feature of the show, and for a collection of Dahlias of all varieties Messrs. J. CHEAL AND SONS, Crawley, led with a fine exhibit. Mr. A. T. BARNES was placed first for Pompon Dahlias, and Dr. WELCH was first for six bunches of Collerette Dahlias.

For a collection of ten varieties of hardy fruits, open to all, Sir CHARLES NALL-CAIN (gr. Mr. T. Pateman), was placed first. Mr. CARL HOLMES (gr. Mr. A. Stagg), The Node, Welwyn, being a very close second.

In the section open to all except nurserymen, Roses and other cut flowers were exceedingly well shown. The principal prize winners were Dr. WELCH, who was placed first for Dahlias, Asters, Marigolds and Geraniums; Mr. H. F. SPICER, who led in the class for twenty-four Roses; Sir CHARLES NALL-CAIN, who was first for twelve bunches of hardy herbaceous flowers; Mrs. CARL HOLMES, being second. The former exhibitor was also placed first for twelve cut stove and greenhouse flowers, and also for twelve Stocks.

Fruit was fairly well shown and Sir CHARLES NALL CAIN was placed first for (1) six dishes of ripe dessert fruits; (2) for Muscat Grapes; (3) for any other white Grape; (4) for outdoor Nectarines; (5) for a scarlet Melon; and (6) for a white-fleshed Melon. Other successful exhibitors of fruit were Mr. CARL HOLMES, Mr. W. H. ALLEN and Mr. A. GILLINGS.

Vegetables were extremely well shown. For a collection of vegetables in nine kinds, Dr. WELCH was first, Mr. W. H. ALLEN second, and Sir CHARLES NALL-CAIN third. In the single dish class, Sir CHARLES NALL-CAIN was awarded first prizes for (*a*) twelve Onions; (*b*) a collection of Potatos; (*c*) for Celery; and (*d*) for Beans. Dr. WELCH won the first prize for Cucumbers, Peas, Carrots, Parsnips and Cabbages. Other successful exhibitors were Mr. CARL HOLMES and Mr. W. H. ALLEN.

DUNDEE HORTICULTURAL.

AUGUST 26, 27 and 28.—The Dundee Horticultural Society celebrates its centenary this year, for it was founded just one hundred years ago for the promotion and advancement of the science and practice of horticulture in all its branches, and the dissemination of a knowledge of such branches of natural science as are connected therewith. The Dundee Horticultural Society has faithfully and well striven to attain these objects.

The show held in 1867, when the British Association visited Dundee, still holds the field for pre-eminence. On that occasion there were over five thousand exhibits, and over sixty thousand persons paid for admission. The next landmark in the history of the Society was the International Show, held in 1876, on the suggestion of the then Earl of Strathmore, the Duchess of York's grandfather. Its success was so great that the Society was placed in affluent circumstances for many years afterwards. Nevertheless, with entries numbering nearly 1,600, the centenary show proved a decided success and one of the best held in Dundee for many years. H.R.H. the Duchess of York, who was accompanied by her father, the Earl of Strathmore, came from Glamis Castle to open the proceedings. In the course of her speech the Duchess astonished her audience by her knowledge of the history of the Society and its career during the past hundred years. There were over 4,000 persons present at the opening.

The section for pot plants is always prominent at Dundee, and on this occasion the entries were numerous and the quality first-class. The principal prize was for four distinct plants, foliage and/or flower distinct. The winner was Mr. GEORGE REID, Invertay, West Ferry, with two Crotons, a Statice and an Ixora. The second-prize exhibit came from Hazelwood, West Ferry (gr. Mr. W. D. Grieve), the entry including a fine Cocos and two good specimens of Lilium. The other prize winners included Mr. D. LEDINGHAM, Carselea, Invergowrie, whose Begonias were unapproached; Mr. JOHN CLARK, Blacknowe; Mr. J. DICK, Lismore, West Ferry; Mr. MARTIN TAYLOR, The Bughties, Broughty Ferry; Mr. J. MCGREGOR, Rossie Priory; Mr. JAMES SMART, Elmslea; and Mr. ALEXANDER COWIESON, West Park.

There was a magnificent display of cut flowers. The Corporation Challenge Cup, open to gardeners only, offered for the best display of cut flowers in vases on a table ten feet by five feet by two feet high, resulted in a fine competition. The winner was Mr. GEORGE OCHTERLONY. Mr. James Beats, Binrock, Dundee, who for many years past has won important prizes at Dundee, carried off two of the special prizes given in the section, besides taking leading places in various other classes. The other prize winners included Mr. THOMAS DOBBIN, St. Helens, Dundee; Mr. GEORGE REID, Rouken Vale, Downfield; and Mr. M. CAMPBELL, High Blantyre.

There were many exhibits in the fruit section, but outstanding and over all were the superb Grapes sent from Glamis Castle (gr. Mr. Donald McInnes). The deputation from the Royal Horticultural Society, London, awarded the Society's Veitch Memorial Medal to Mr. MCINNES. Mr. ROBERT DUNCAN, Montrose, was also a prominent winner in this section, followed by Mr. JAMES SMART, Elmslea; Mr. ALEX. COWIESON, West Park; Mr. J. MCGREGOR, Rossie Priory; Mr. JAMES STEWART, Seathwood; Mr. W. GOODALL, Errol; Mr. R. KIRKWOOD, Pine Grove, Dundee; Mr. J. BRUCE, Benvie, Invergowrie; Mr. D. PULLAR, Dura, Cupar, and Mr. F. KERR, Braefoot, Carnoustie.

Mr. DAVID DALRYMPLE, Ratheluan, Cupar, proved a keen and successful winner in many of the vegetable classes. He was, indeed, one of the leading prize winners in the show. Mr. PETER KERR, Braefoot, Carnoustie, was another whose successes stood out well, as also was Mr. JOSEPH DICK, Lismore, Broughty Ferry.

In the amateurs' section, Mr. PETER DONALDSON, Station Cottage, Blackford, was awarded the Corporation Cup, the Gold Medal presented by the British Broadcasting Co., Ltd., and the Silver-Gilt Medal presented by *The Gardeners' Chronicle*, Ltd., worthily won, and little wonder the judges described the winning entry as a great comprehensive collection.

NON COMPETITIVE EXHIBITS.—A large number of nurserymen, florists and seedsmen exhibited groups, and the deputation from the Royal Horticultural Society, London, awarded Gold Medals to the following firms:—Messrs. JAMES CARTER AND CO., London, for vegetables; Messrs. STORIE AND STORIE, Glencarse, for a collection of fruit; Messrs. D. AND W. CROLL, Dundee, for flowers and vegetables; Messrs. THYNE AND SON, Dundee, for flowers; Messrs. W. P. LAIRD AND SINCLAIR, LTD., Dundee, for flowers; Messrs. DOBBIE AND CO., LTD., Edinburgh, for Roses and Dahlias.

BUTE HORTICULTURAL.

AT the annual show, held at Rothesay, on Wednesday, Mr. John Davidson, gardener to Sir John Reid, Ardincraig, Rothesay, had a splendid record in the competitive classes. He won eleven first prizes in the cut flower section, eight for pot plants, and seven in the fruit classes, together with one challenge cup for the best collection of vegetables, the medal for the most points gained in the show, and the special prize for fruit. The entries numbered 530, an increase of one hundred on last year's total.

SCHEDULE RECEIVED.

HITCHIN CHRYSANTHEMUM SOCIETY.—Annual show to be held on Thursday, November 11.—Secretary, Mr. W. G. P. Clark, 4, York Road, Hitchin.

Obituary.

W. H. Aggett.—The many friends of the late Mr. W. H. Aggett, formerly Superintendent of the Gardens and Open Spaces Department, Bermondsey Borough Council, will regret to learn of his death on Saturday, August 21. The interment took place on Friday, August 27, at 3 p.m. A short service was conducted at his residence, 12, Osborne Road, Thornton Heath, and at the graveside in Mitcham Road Cemetery, Croydon, by the Rev. J. J. Johnson, of South Norwood Hill. Numbered among those present were the relatives, Mr. J. Hart, a former mayor of Bermondsey, and Mr. Wm. Jones, a former chairman of the Bermondsey Borough Council Beautification Committee, Mr. J. Smith (*Amateur Gardening*), Mr. J. B. Riding, Mr. and Mrs. McCarthy and Mr. John Conner. A number of beautiful floral tributes were sent from various sources, including a cross of Dahlias from the Beautification Committee of the Borough Council, bearing the following inscription: "The flowers he loved and made popular with the public." An account of his professional career and his portrait were published in *The Gardeners' Chronicle*, May 12, 1923, on the occasion of his retirement on pension, after thirty years service, from the Bermondsey Borough Council.

Walter C. Slocock.—It is with the deepest regret we record the death, on Tuesday last, at Woking, of Mr. Walter C. Slocock, proprietor of the Goldsworth Old Nursery, Woking. He was one of the largest growers of trees and shrubs for sale in the country, indeed, his nursery was one of the most important of its kind in the world. A short account of the late Mr. Slocock's career, accompanied with his portrait, was published in *The Gardeners' Chronicle* for January 2, 1926. Mr. Slocock possessed a wide knowledge of trees and shrubs, especially Rhododendrons and Conifers, and in appreciation of his work in raising and distributing rare trees and shrubs he was awarded the Victoria Medal of Honour by the Council of the Royal Horticultural Society in 1916.

ANSWERS TO CORRESPONDENTS.

FUNGUS ON FIG.—*E. S.* Your Fig is attacked by Cercospora Bolleana. Collect and burn all the diseased fruits and foliage, then spray the tree with dilute Bordeaux mixture. If the specimen from which the diseased fruits are gathered is very badly affected by the fungus and other trees are growing in the same house, we advise you to grub it up and burn it.

NAMES OF FLOWERING PLANTS. *J. W. F.* The plants sent for identification were Gentiana asclepiadea, Swallow-wort Gentian, the blue flower, and Tamarix tetandra.

ROSE LEAF-EATING BEES.—*E. C.* The insect eating your Rose leaves is a species of the Upholsterer Bee, Megachile centuncularis. It is generally recommended to trace the bees to their nests and destroy them at dusk. Sodium cyanide inserted at the entrance would probably be effectual. You might try the effect of making the leaves distasteful to the bees by spraying them with a bitter substance, such as strong Quassia extract.

SWEET PEA STEM WITH NINE FLOWERS.—*G. F.* Had the flower stem been a simple one, the fact that it carried nine flowers would probably have constituted a record, but in your case, as in many others where an abnormal number of flowers have been produced, the flower stem has become fasciated.

Communications Received.—R. D. P.—A. G.—Foreman—H. P.—G. H. K.—F. F. B.—D. & W. C.—P.—K. & C.—Subscriber—D. M.—A. W. G.—A. C.—H. S.

MARKETS.

COVENT GARDEN Tuesday, August 31, 1926.

We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Tuesday by the kindness of several of the principal salesmen, who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general average for the week preceding the date of our report. The prices depend upon the quality of the samples, the way in which they are packed, the supply in the market and the demand, and they may fluctuate, not only from day to day, but occasionally several times in the day.—Eds.

Plants in Pots, etc.; Average Wholesale Prices.

(All 48's except where otherwise stated).

	s. d. s. d.
Adiantum cuneatum per doz. ...	10 0-12 0
—elegans ...	12 0-15 0
Aralia Sieboldii	9 0-10 0
Araucarias, per doz.	30 0 42 0
Asparagus plumosus ...	12 0-18 0
—Sprengeri ...	12 0-18 0
Aspidistra, green	36 0-60 0
Asplenium, doz.	12 0-18 0
—32's	24 0-30 0
—nidus ...	12 0-15 0
Asters, in variety, 48's, per doz.	9 0-12 0
Campanulas—	
white, per doz.	8 0-10 0
blue, ,,	9 0-12 0
Cacti, per tray	
—12's, 15's ...	5 0- 7 0
Celosias, 48's, per doz. ...	9 0-10 0
Chrysanthemums, in variety, 48's, per doz. ...	15 0-21 0

	s. d. s. d
Crotons, doz. ...	30 0-45 0
Cyrtomium ...	10 0-25 0
Hydrangeas, white, 48's, per doz.	24 0-70 0
Lilium longiflorum (Harrisii) 48's, 32's per doz.	15 0-21 0
Lilium lancifolium rubrum, 32's, 48's each	2 6-3 6
— —album, 32's, 48's each ...	2 0-3 0
Marguerites, 48's per doz. ...	18 0-21 0
Nephrolepis in variety ...	12 0-18 0
—32's	24 0-36 0
Palms, Kentia	30 0-48 0
—60's	15 0-18 0
Pteris, in variety	10 0-15 0
—large, 60's ...	5 0- 6 0
—small ...	4 0- 5 0
—72's, per tray of 15's ...	2 6- 3 0

Cut Flowers, etc.: Average Wholesale Prices,

	s. d. s. d.
Adiantum decorum, doz. bun.	8 0-10 0
cuneatum, per doz. bun. ...	6 0-8 0
Asparagus plumosus, per bun., long trails, 6's ..	2 0-3 0
med. sprays	1 6-2 6
short... ...	0 9-1 3
—Sprengeri, bun. long sprays...	1 6-2 0
med. ,, ...	1 0-1 6
short ,, ...	0 4-1 0
Asters, white per doz. bun. ...	3 0-5 0
— coloured, per doz. bun.	3 0-5 0
Carnations, per doz. blooms	1 0-2 6
Chrysanthemums, white, per doz.	2 6- 3 6
—bronze ,,	2 0-2 6
—white, per doz. bun.	9 0-12 0
—bronze per doz. bun. ...	8 0-12 0
—yellow, per doz. blooms ...	2 0-4 0
—yellow, per doz. bun.	6 0-9 0
Coreopsis, per doz. bun. ...	1 0-1 6
Cornflower, pink, per doz. bun.	1 6-2 0
—blue, per doz. bun. ...	1 3-1 6
Croton, leaves per doz. ...	1 9-2 6
Fern, French, per doz. bun.	10 0-12 0
Forget-me-not, per doz. bun.	6 0-8 0
Gaillardias, per doz. bun. ...	2 0-2 6
Gardenias, 12's, 18's per box .	6 0-9 0
Gladiolus, primulinus, 6's, per doz. bun. ...	6 0-9 0
—various Giant varieties, per doz. spikes ...	0 9-2 0
Gypsophila elegans ...	3 0-4 0
—double paniculata ...	1 0-1 6

	s. d. s. d.
Heather, white, per doz. bun.	6 0-9 0
pink, per doz. bun. ...	6 0-9 0
Lapageria, white, per doz. blooms	2 6-3 6
Lilium longiflorum long, per doz.	1 3-1 6
Lilium speciosum rubrum, long, per doz. blooms ...	1 6-2 0
—short doz. blooms ...	1 0-1 6
—lancifolium album, per doz. blooms, long	2 0-2 6
Lily-of-the-Valley, per doz. bun.	18 0-30 0
Montbretia, per doz. bun. ...	3 0-4 0
Orchids, per doz.	
—Cattleyas ...	36 0-42 0
Physalis, per doz. bun.	12 0-18 0
Roses, per doz. blooms—	
—Madame Abel Chatenay ...	1 0-2 0
—Molly Sharman Crawford	1 6-2 6
—Richmond ...	1 0-2 0
—Columbia ...	2 0-2 6
—Golden Ophelia	1 6-2 0
—Sunburst ...	1 6-2 6
—Mrs. Aaron Ward ...	1 0-1 6
—Madame Butterfly	1 6-2 0
Scabiosa caucasica, per doz. bun.	2 0-3 0
Smilax, per doz. trails ...	3 0-4 0
Statice latifolia, per doz. bun.	8 0-10 0
—sinuata per doz. bun. ...	3 0-6 0
Stephanotis, per 72 pips ...	3 0-3 6
Stock, double white, per doz. bun. ...	5 0-6 0
Sultan, white per doz. bun.	3 0-6 0
—yellow, per doz. bun. ...	3 0-6 0
—mauve, per doz. bun.	3 0-6 0
Violets	2 6-3 0

Remarks.—Trade during the past week has been quiet. Best quality blooms of Carnations and Roses have been a trifle shorter in supply, but the quantities of all other subjects are more than sufficient for present requirements. All Liliums are excellent in quality; Lilium lancifolium rubrum has declined further in price; L. auratum is now offered in limited quantities. Asters, both single and double, are particularly good. Amongst Chrysanthemums, white and yellow varieties are the most plentiful amongst disbudded blooms. Bronze blooms are gradually improving in quality. Small consignments of Physalis have been offered during the past week, but the spikes are somewhat on the green side. Gardenias are excellent in quality, also Lapagerias and Stephanotis.

Fruit: Average Wholesale Prices.

	s d. s d.
Apples, English—	
—Miller's Seedling, ½-sieve...	4 0-10 0
—Worcester Pearmain, ½-sieve ...	4 0-10 0
—James Grieve, ½-sieve ...	4 0-8 0
—Lord Derby per bushel ...	6 0-8 0
—Grenadier, per bushel ...	5 0-8 0
—Lane's Prince Albert, bush.	4 0-8 0
—Sterling Castle bush. ...	4 0-8 0
—Australasian Sturmer ...	10 0-18 0
—Statesman ...	9 0-10 0
—Californian Gravenstein ...	16 0-17 0
Apples, Italian, per box ...	7 0-10 0
Bananas ...	14 0-22 6
Figs, forced, per doz.	4 0-10 0
Grape Fruit—	
Isle of Pine ...	— 36 0
Grapes, English Black Hamburgh, per lb	1 0-2 0
—Canon Hall...	2 6-5 0
—Gros Colmar	1 3-2 6
—Alicante ...	1 0-2 0
—Muscat ...	2 0-5 0

	s. d. s. d.
Lemons, Messina, per case ...	14 0-20 0
—Others ...	8 0-12 0
Melons—	
—Canteloup ...	1 6-4 0
—Others ...	0 8-1 0
Oranges—	
—Californian ...	20 0-24 0
Peaches, Belgian, per doz. ...	2 0-6 0
—English per doz.	4 0-12 0
Pears—	
—Californian Beurré Hardy ½-cases ...	10 0-12 0
cases ...	18 0-20 0
—French William's Bon Chretien (48's)	2 0-2 6
—coster, finest, 64's to 90's ...	6 0-10 0
—ordinary ...	3 0-4 0
—Common Belgian, cwt. ...	4 0-5 0
Pines	2 0-4 0
Plums, English—	
—Belle de Louvain ½-sieve ...	4 0-6 0
—Victoria ...	3 0-6 0
—Monarch ...	4 0-6 0
—Prince of Wales	2 6-3 6
—Greengage ...	2 6-4 0
—Damson ...	3 0-4 0
Plums—	
—French ...	2 0-2 6

Vegetables: Average Wholesale Prices.

	s. d. s. d.
Beans—	
—Runner, bush.	1 6-2 6
Beets, per cwt.	5 0-6 0
Cabbage, per doz.	1 6-2 0
Carrots, new, per doz. bun.	1 0-1 6
Cauliflowers, per doz.	2 0-3 0
Cucumbers, per doz.	2 0-4 0
—Flats ...	6 0-14 0
Horseradish, per bundle ...	1 6-2 0
Lettuce, round, per doz. ...	0 6-1 0
Marrows, tally	5 0-7 0
Mint	1 6-2 0
Mushrooms	
—cups ...	2 6-3 0
—Broilers ...	1 6-2 0

	s. d. s. d.
Onions—	
Valencia ...	7 0-10 0
Parsnips, per cwt. ...	5 0-6 0
Potatos—	
—King Edward per cwt. ...	5 0-6 0
—others ...	4 0-4 6
Spinach, per bushel ...	2 6-3 6
Tomatos—	
—English, pink	3 0-4 0
—pink and white	3 0-4 0
—blue ...	2 6-3 0
—white ...	2 6-3 0
—Guernsey ...	— 2 6
—Dutch ...	1 4-2 0
Turnips, per cwt.	5 0-7 0

Remarks.—After a usual period of quiet business during August, there is a better tendency all round, not very much marked, perhaps, but certainly obvious. English Apples are a little more plentiful, and good dessert varieties are in request as well as large cookers. Supplies of Apples are arriving from various sources, mainly the continent and California. Pears, both English and imported, are plentiful, so much so that common Pears are not realising prices sufficiently high enough to pay expenses. A few good clean Williams's Bon Chretien and Beurré Hardy are selling well at fair prices. The Tomato trade has gone through a lean period, mainly due to heavy consignments from Holland which have been making very poor prices. Some slight improvement in this section is looked for, but the competition of outdoor Jersey produce is a factor to be taken into account. English Plums are abundant, the variety Victoria being particularly reasonable in price at the week-end. A few fruits of Monarch are arriving and are expected to realise better prices than the earlier Plums. Hothouse Grapes are inclined to be a better business, Belgian Grapes not being plentiful at the moment. Best Peaches are selling well but smaller grades are a poor business. Melons are in better demand, no doubt owing to the continuance of fine weather. The Cucumber trade shows little variation, in spite of the favourable condition for such produce. Vegetables have not been a good trade. Scarlet Runners have been very cheap, but it is likely that we shall see better prices in this section. Green vegetables are a rather better trade. Blackberries are plentiful and cheap. Field Mushrooms are in better supply. There seems to be a slight improvement in the Potato trade.

GLASGOW.

In all sections of the market price movements were generally narrow and irregular. Soft fruits, such as Strawberries, Raspberries, Gooseberries and Currants are now over for the season, but they have been succeeded by generous supplies of Victoria Plums, Blackberries, Apples and Pears, all of which are fairly cheap. English cooking Apples, Lord Derby and Jubilee, sold at 32/- per cwt.; Emmith Early and Lord Grosvenor at 24/- to 28/-; and Worcester Pearmain, at 7/- per half-bushel; Gravenstein further advanced to 19/6 per case. Prices for Victoria Plums fluctuated between 3/- and 6/- per half-bushel; chips of 12 lb made 3/- to 4/-, and special fruits sold at 6d. per lb. Dutch Grapes were worth 3/6 per crate yellow Melons realised 14/- to 17/-; bronze Melons 11/- to 12/-; and Water Melons, 12/-. Californian Beurré Hardy Pears sold for 19/- to 26/- per case; Duchess for 12/6 to 13/6 per half-case; French Williams' Bon Chretien, 2/6 per box and 5/- to 7/- per crate; Dutch Wine, 6/- to 7/- per barrel; double Phillips, 4/-; and Jersey Clapp's Favourite, 5d. per lb. Belgian Royal Grapes realised 1/2 to 1/4 per lb; and Muscats, 2/- to 3/-. Peaches were worth 3/- to 6/- per dozen; Brambles, 1/6 to 1/8 per chip; Red Currants, 9d. per lb; and South African Oranges, 19/- to 24/- per case.

A glut of Cauliflower was accompanied by a sharp fall in prices, which ranged from 1/6 to 4/- per dozen. Cucumbers made 2/6 to 4/6; Lettuces, 1/6; French Beans, 3d. to 4d. per lb, and Peas 12/- to 16/- per cwt. Globe Artichokes were unsaleable. Scotch Tomatos were plentiful and cheap at 5d. to 6d. per lb; Guernsey Tomatos fetched 3d. and Dutch 2½d.

The cut flower market was quiet and featureless. Spray Chrysanthemums sold from 2d. to 4d.; disbudded white, 1/- to 1/3 (6's); yellow and pink, 1/- to 1/2; and bronze, 10d. to 1/-. Gladioli were cheap; small spikes sold at 6d. to 1/- per dozen; special spikes, 4d. to 8d. (6's); and extra special, 8d. to 10d. Carnations realised 1/- to 1/9 per dozen; red and white Roses, 1/- to 1/6; pink Roses, 1/6 to 2/-; Lilium longiflorum (Harrisii), 1/6 to 2/- per bunch; Asters, 1d. and 2d.; Sweet Peas, 1d. to 3d.; Smilax, 6d. to 1/-; Gypsophila, 2d. to 3d.; and Asparagus, 6d. to 9d.

TRADE NOTES.

Mr. W. Taylor informs us that he was awarded a large Gold Medal for a non-competitive exhibit of a rock and water garden at Shrewsbury show.

In addition to the Gold Medal awarded for their new mauve-coloured Sweet Pea, Chieftain, at the Scottish National Sweet Pea Society's trials, Messrs. Thomas Cullen and Sons were awarded a Certificate of Merit for a new blood-scarlet variety named Ruddigore.

GARDENING APPOINTMENTS.

Mr. F. J. Clark, formerly gardener to Sir George Holford, Westonbirt, Tetbury, Gloucester, as gardener to His Grace the Duke of Bedford, K.G., Woburn Abbey, Bletchley.

Mr. T. Hobbs, previously gardener to F. Harrild, Esq., The Sherlies, Orpington, Kent, as gardener to H. Lewis, Esq., Coombwell Priory, Flimwell, Kent. (Thanks for 2/- for R.G.O.F. Box.—Eds.)

Mr. J. Heath, for over ten years gardener to Sir Charles Shaw, Bt., at Wightwick Hall, Compton, Wolverhampton, and Cranbourne Court, Windsor Forest, Berkshire, as gardener to the same gentleman at Framer wood, Stoke Poges, Slough, Bucks. (Thanks for 2/- for R.G.O.F. Box.—Eds.)

Mr. H. Bristow, for the past two years gardener to Col. H. Spencer Follett, C.B.E., Rockbeade Manor, Devon, and previously for nine years gardener to Capt. P. G. R. Benson, Lydeard House, Taunton, as gardener-bailiff to R. C. Coode, Esq., Polapit, Tamar, Launceston, Cornwall. (Thanks for 2/6 for R.G.O.F. Box.—Eds.)

Mr. J. Bakewell Smith, lately gardener to Brigadier-General Kays, at Firgrove House, Farnham, as gardener to Mrs. Ward Poole, at Buckler's Wood, Beaulieu, Hampshire.

Mr. L. R. Astley, for the past five years and nine months gardener to Col. St. Clair Oswald, Dunnikier, Kirkcaldy, Fife, as gardener to Mr. F. Norie-Miller, Cleeve, Cherrybank, Perth. (Thanks for 2/- for R.G.O.F. Box.—Eds.)

Mr. Alex. Holm, whose appointment as superintendent to Messrs. Austin and McAslan was referred to on p. 162, was at the Knap Hill nursery of Mr. Hosea Waterer (late Anthony Waterer) and not in the employ of Messrs. Waterer, Sons and Crisp, as stated in our issue of August 28.

CATALOGUES RECEIVED.

Bulbs.

Sale and Son, Ltd., Wokingham.
Kent and Brydon, Ltd., Darlington.
D. G. Purdie, 6, Waterloo Street, Glasgow.
Dickson, Brown and Tait, 57, Cross Street, Manchester.
Upstones, 35, Church Street, Rotherham.
Morle and Co., Ltd., 150-156, Finchley Road, N.W.
L. R. Russell, Ltd., Richmond, Surrey.
E. P. Dixon and Sons, Ltd., Paragon Square, Hull.
McHattie and Co., Chester.
Samsons, Ltd., 8 and 10, Portland Street, Kilmarnock.

Miscellaneous.

D. Prior and Son, Ltd., Colchester.—Roses.
J. Carter and Co., Raynes Park.—Wheat and farm seeds.
T. Carlile, Loddon Nurseries, Twyford.—Hardy Plants.
J. T. West, Tower Hill, Brentwood, Essex.—Dahlias
Alex. Dickson and Sons, Ltd., Hawlmark, Newtownards, Co. Down.—Roses.

Foreign.

Carl Pabst, Erfurt, Germany.—Bulbs.

THE
Gardeners' Chronicle

No. 2072.—SATURDAY, SEPTEMBER 11, 1926

CONTENTS.

Abercrombie, John ... 216
Alpine garden—
  Anemone trifolia ... 206
  Phlox Douglasii ... 206
American Gooseberry mildew 202
Books, notices of—
  Geschichte der Gartenkunst ... 210
Bulb garden—
  Bulbs for cut blooms 206
  Tulips 206
Bulbs for forcing, small 207
Cotson, Mr. T. ... 202
Edinburgh, notes from 208
Edinburgh Royal Botanic Garden Guild... 203
Flowers of waning summer 210
Fruit crops, remarks on the condition of the 214
Fruit garden, the market 213
Fruit register—
  The Himalaya Berry 215
Garden as a present, a 203
"Gardeners' Chronicle" seventy-five years ago 203
Gardening lectures in North London ... 203
Garden notes from south-west Scotland 208
Gaultheria Veitchiana 202
Gladioli, the Langprim 216
Grass land, the intensive cultivation of ... 201
Hampton Court, late flowers at 208
Hardy flower border—
  Gillenia trifoliata ... 206
Horticultural exhibition at Namur ... 202
Mesembryanthemum... 212
Monkey in a bunch of bananas, a... ... 203
Obituary—
  Baxter, Andrew ... 219
Orchid notes and gleanings—
  Cattleya Iris ... 211
  Laelio - Cattleya Navajo, Low's variety 211
Parks and gardens, public 215
Partridges and Potato crops 203
Plant names, the pronunciation of ... 216
R.H.S. Fruit Show ... 201
Rose garden—
  Rose Etoile de Hollande 207
  Roses at Kew ... 207
Scottish Sweet Pea trials 203
Seeds, the vitality of... 216
Societies—
  Glasgow and West of Scotland 218
  National Chrysanthemum 219
  Royal Horticultural 217
Southport Show impressions 216
Trees and shrubs—
  Evergreen shrubs for walls 209
  Rhododendron chasmanthoides ... 209
Vegetable garden—
  Cabbages 215
Wasps, the control of... 215
Week's Work, the ... 204
Woodland garden—
  Geranium phaeum... 206
  Rosa alpina ... 206

ILLUSTRATIONS.

Cotson, Mr. T., portrait of 202
Daffodils in the kitchen garden at Brocket Hall ... 205
Gaultheria Veitchiana, fruiting shoots of 203
Potinara La Paz 211
Punctillaria magnipunctata 212–213
Rhododendron chasmanthoides... 209
Rose Shot Silk exhibited by Messrs. A. Dickson and Sons at Southport show 207
Wasps' nest with wasps destroyed by cyanogas ... 215

Average Mean Temperature for the ensuing week deduced from observations during the last fifty years at Greenwich 59·8.

Actual Temperature—

The Gardeners' Chronicle Office, 5, Tavistock Street, Covent Garden, London, Wednesday, September 8, 10 a.m. Bar. 30·4. Temp. 64°. Weather, Dull.

The Intensive Cultivation of Grass Land.

So much has been said and done with respect to intensive cultivation of arable land, and the proof of success in increasing yield of crops by methods of intensive cultivation is so manifest, that it is indeed surprising that until recently comparatively little had been done to increase the yield of grassland. It is true that the routine practice of grass farming has induced a high level of production and that the practice includes the application of both phosphatic manure in the form of basic slag and of nitrogenous manure, such as sulphate of ammonia. But it would appear to have been left to necessity, in the form of shortage of feeding stuffs, to mother German inventiveness in inducing grass itself to take the place of concentrated foods which the rigours of the late war denied German land. The starting point of the experiments in intensive manuring of grass lands which Germany has been conducting during the past seven or eight years is the fact that young herbage is richer in organic nitrogen compounds than is old herbage. Therefore, the experimenters argued, why not supply deficiency of proteid nitrogen due to lack of concentrated food by feeding young herbage to cattle. In conducting the experiments advantage was taken of the well-known facts, first that the green plant is a potent transformer of inorganic nitrogen into organic nitrogen, and second, that the law of diminishing returns does not begin to operate in an economic sense until considerably more than the usual dressing of nitrogenous manures (one to two hundredweight per acre) has been applied. With these considerations in mind, German experimenters set out to contrive that their pastures should yield the maximum of organic nitrogen to the animals which they support. By timing the application of sulphate of ammonia or of other suitable nitrogenous fertilisers, they find that it is possible to bring different fields of the farm, or different sections of a field, into the most profitable cropping stage in sequence. When the grass is some four to five inches in height it appears to be at its richest in nitrogen and at that stage the cattle are turned in to graze it—milch cows in the front line, and after them, in numbers sufficient to ensure absolutely close and even grazing, dry cows or heifers, or both. After a few days the animals are moved on to the second field or plot which, in the meantime, has reached the most profitable grazing stage and so on with the third and subsequent fields or plots, which may number so many as seven. When the first cropping is completed, the closely-grazed field is again dressed with a hundredweight or so of sulphate of ammonia, or with nitrate, and so also are the other plots in their turn. When the time comes round, a third dressing of nitrogenous fertiliser is given, and by these means it is claimed that cows in milk may be put out to graze weeks earlier than is possible under ordinary conditions, and that milk yields may be maintained throughout the grazing months at the three-gallon level without artificial concentrates. Where the yield is higher, and justifies the additional expenditure, a cake ration is no doubt fed to those animals which by their milk performance deserve it. In like manner, the fields destined for hay are intensively cultivated. The first cut is taken when the grass is somewhere about ten inches high, and the fields supplied at once with a second dressing of nitrogenous fertiliser, and a second cut is taken later. By these means it is claimed that although the bulk may or may not be increased, the hay obtained is of much higher feeding value than that taken when the grasses have begun to run to fibre. From experiments which are being conducted on these lines in this country it certainly looks as though now that nitrogenous fertilisers are plentiful and relatively cheap, it should be possible to increase yields of agriculturally manufactured articles such as milk, cheese, and beef, to much higher levels than heretofore. Moreover, and from what we have observed, it seems certain that the effect of close grazing has two additional beneficent effects. Clovers, far from being discouraged, as might be the case where a series of dressings of sulphate of ammonia are put on ungrazed grass land, are actually increased. Weeds, however, are suppressed to a remarkable degree. This last fact alone makes the method well worthy of consideration and trial by the progressive farmer, for no one who travels now through the central grass lands of England can fail to be struck and distressed by the riotous growth of Thistles and other weeds in what should be good pasture land. Unfortunately for the gardener, there will not seem to be any immediate application of these ideas. What he wants in the garden is generally not more but less grass, and he would be a great benefactor to the owner of private gardens who could make one blade of grass grow where two grew before. Nevertheless, there are reflections worth making, even by the gardener. The supplies of nitrogenous fertilisers are increasing year by year. Until synthetic nitrogen compounds were produced on a commercial scale the world of green plants, and hence the whole world of living things, was threatened with nitrogen hunger. Now there is plenty where scarcity was, and the gardener can make sure by a judicious and plentiful use of artificial nitrogenous manures that his crops receive all the inorganic nitrogen that they can transform profitably into organic form.

Chelsea Show, 1927.—The Council of the Royal Horticultural Society has fixed the dates for the 1927 Chelsea Show on May 24, 25 and 26.

London Gardens Exhibition.—To-day, Saturday, September 11, at 2.30 p.m., an interesting exhibition of horticultural produce grown in London, will be opened at the Temple Gardens, Victoria Embankment, by Sir George Hume, Chairman of the London County Council. The exhibits will include displays from the prize-winning gardens in the recent All-London Gardens Championships, displays by local garden societies, by the trade and by individuals. Three classes are provided for exhibits from gardens within a three-mile radius of London Bridge. There will also be a full-sized reproduction of the front garden for which Mrs. W. F. Smith, of Lowfield Road, North Acton, was awarded the Championship prize, while the Ministry of Agriculture will provide an advice bureau where full particulars regarding plant pests and diseases may be obtained free of charge. The exhibition is being organised by *The Daily Express* in conjunction with the London Gardens Guild. The charge for admission is 6d. on September 11 and 13, and on Sunday, September 12, admission will be by ticket only.

R.H.S. Fruit Show.—We have before us the schedule of the special fruit show which will be held in the Royal Horticultural Hall, Vincent Square, Westminster, on October 12 and 13. Judging will commence at 10.5 a.m., and the show will be opened to the public at 1 p.m. on the first day, and will close at 5 p.m. on the Tuesday, and 4 p.m. on the second day. The schedule includes 117 classes, divided into seven divisions. Among the challenge cups offered for award are the Gordon-Lennox Cup for the most meritorious display of fruit by an amateur; the George Monro Memorial Cup, for the best exhibit of Grapes by an amateur; the Affiliated Societies Cup to be awarded to the best exhibit of fruits by an affiliated society; and the Bunyard Silver Cup offered for the most promising seedling Apple which has not been previously exhibited at any of the Society's shows. If space is available groups of flowers, fruits and vegetables, not for competition, will be included; application for such space should be made not later than first post on Wednesday, October 6.

North of England Horticultural Society's Show.—The autumn show of the North of England Horticultural Society will be held in the Winter Gardens, Harrogate, on Wednesday, September 15, and will continue on the 16th and 17th. The three classes for fruit include one for a display of fruits on a table eight feet by five feet, in which the prizes are £12, £8 and £4 respectively; the first prize is given by the Royal Botanical and Horticultural Society of Manchester and the Northern Counties Society. The second class is for a display of fruits on a table six feet by five feet, in which prizes of £9,

£6 and £3 respectively are offered, while the third class is for a display of fruits on a table five feet by five feet, the prizes in this class being £4, £3 and £2 respectively. On the opening day of the show, the Council will consider the offer of a lease of a piece of land by the Harrogate Corporation having an area of three-and-a-quarter acres, which the Corporation is prepared to lease to the Horticultural Society for a term of seven years at a nominal rent of £4 per annum. There are suggestions for holding trials of Roses for scent, Dahlias, Chrysanthemums and Violas. The Secretary is the Rev. J. Bernard Hall, Farnham Vicarage, Knaresborough.

National Dahlia Society's Show.—The annual show of this Society, which was officially opened by the Rt. Hon. Viscount Ullswater, at the R.H.S. Hall, Vincent Square, on Wednesday, fully maintained the standard of its immediate predecessors. With the aid of a few miscellaneous floral exhibits, the hall was well filled with blooms. The large trade groups, arranged as usual around the hall, made brilliant and effective displays. The additional classes for floral arrangements of Dahlias were very popular with the exhibitors, and the many artistic designs, together with the dinner table classes, well illustrated the decorative value of the Dahlia. In most of the general classes the competition was keen and the quality was high, especially in the classes for exhibition Cactus and Pompon varieties. There was a good attendance throughout the day. We hope to refer to the show in greater detail in our next issue.

Sweet Pea Essay Competition, 1926.—The General Committee of the National Sweet Pea Society has arranged to hold a competition and offers three prizes—first £3; second, £1 5s.; third, 15s., for the three best essays on "My Experiences with Sweet Peas." The three prize essays will be published in the *Sweet Pea Annual* for 1927, and the Committee reserves the right to publish any of the other essays, wholly or in part, in future issues of the Annual. Essays must reach the Secretary at 19, Bedford Chambers, Covent Garden, London, E.C.2, not later than Tuesday, October 19, 1926, and will be subject to the following conditions.—(1) Only members of the National Sweet Pea Society may compete; (2) Essays to consist of not fewer than 1,500 words nor more than 2,000 words in length, and be written or typed on one side only of the paper; (3) Essays must be signed with a nom-de-plume only, and must reach the Secretary not later than October 19, 1926; (4) Envelopes must be marked "Essay" on the left-hand top corner and must contain a smaller, sealed envelope enclosing the nom-de-plume and name and address of the competitor (these smaller envelopes will not be opened by the judges until after the awards have been made); (5) All essays submitted will become the property of the National Sweet Pea Society.

Horticultural Exhibition at Borgherhout.—At Borgherhout, near Antwerp, a very successful exhibition of cut flowers was held on the 28th 29th and 30th August, Dahlias and Roses being the principal flowers represented. The show took place in the beautiful "Te Boelaer," Park, but, unfortunately, scarcely enough room was allowed for the exhibits to show to their best advantage. Orchids were well shown by local firms; Dahlias were freely represented, one especially fine variety, Dr. Hellmuth Spath (lilac), being exhibited by the firm of Topsvoort of Aalsmeer.

Gaultheria Veitchiana.—This attractive, blue-fruited shrub (Fig. 99), was conspicuous in Mr. T. Smith's exhibit of interesting shrubs—from the Daisy Hill Nursery, Newry, Co. Down.—at the Southport show, and may be recommended for providing bright colour in the alpine garden, when the flowers of most trees and shrubs are over. It was first described by Mr. W. B. Craib, in *Gard. Chron.*, September 7, 1912. This Gaultheria was found wild by Mr. E. H. Wilson when plant collecting in China for Messrs. James Veitch and Sons, in whose nursery at Coombe Wood, Kingston Hill, it first fruited. Wilson states that the species is widely distributed in Western Szechuan, where it grows on most mountain-sides, margins of woods and thickets. The plant is evergreen, producing white flowers which are succeeded by the indigo-blue fruits. It grows best in a peaty soil and needs much moisture at the roots. The illustration shows the fruits much reduced in size, for they are as large as small Peas.

Mr. T. Cotson.—Among the many officials who are responsible for the smooth working of everything concerned with the York Gala, Mr. T. Cotson is one whose duties do not bring him very prominently before the visitors, but he, nevertheless, counts for a very great deal among exhibitors and is responsible for the spacing and disposal of their exhibits. Mr. Cotson, who is gardener to John Melrose, Esq.—the doyen of York Gala—has been Curator of the York Gala since 1920, and the easy working of all the horticultural arrangements is due largely to his energy and personality. His never failing courtesy and his desire to meet the requirements of all exhibitors have won him very high regard and esteem and his system in regard to the final arrangements for the placing of vans ready for exhibitors to commence packing up immediately on closing time, is worthy of being copied by those in authority at many other leading horticultural exhibitions in the provinces. Mr. Cotson comes from an old gardening family which for five generations has provided capable gardeners. He began his career under his grandfather and held various positions at Harperley Park, Co. Durham; Grantley Hall, Ripon; with the late Mr. Reginald Farrer, at Craven Nursery, Clapham, York; and with Messrs. Kent and Brydon, at Darlington, consequently he brings a life interest and experience to bear upon his duties as Curator of the York Gala.

MR. T. COTSON.

The Thermometer.—Mr. W. F. Higgins, M.Sc., in a lecture entitled "Thermometry," delivered before the Royal Society of Arts, gave some interesting particulars of the development of the thermometer. The invention of this instrument has been credited to several scientists, but Mr. Higgins states that it is probable that the thermometer was invented by Galileo between 1590 and 1600. The early type of instrument consisted of an inverted flask with a long neck, the end of which dipped below the surface of a liquid contained in an auxiliary vessel. On warming the flask some of the contained air was expelled and on subsequent cooling and contraction of the air the liquid rose in the neck of the flask. This particular thermometer may be described as an air thermoscope, and it indicates the changes in the barometric pressure as well as changes of temperature. The next method was to employ a liquid instead of a gas, and Ferdinand II, Grand Duke of Tuscany, introduced the marked improvement of hermetically sealing the upper end of the thermometer tube. Sir Isaac Newton made a thermometer filled with linseed oil and adopted a definite scheme of graduation. But it is to Fahrenheit that we owe the scale at present in general use. This scientist fixed the temperature of a mixture of ice and water mixed with sal ammoniac or salt at 0°; his temperature of the mixture of ice and water without salt added was 32°, and the temperature of a normal healthy body he fixed at 96°. By his scale, Fahrenheit found the temperature of boiling water to be 212°. Fahrenheit was also one of the first workers to employ mercury as a thermometric fluid, and he also made some of his instruments with cylindrical bulbs instead of spherical, so that the sensitiveness should be increased by the larger surface. According to Mr. Higgins, Fahrenheit's work dates from 1720 to 1726. Réaumur, whose scale is still used on the Continent, employed spirit thermometers, and took the melting point of ice as his fixed point, and on his basis found the temperature of boiling water to be 80°. The origin of the Centigrade temperature is the next point of interest; it takes the melting point of ice and the boiling point of water as the two fixed points with the interval temperature between these two points divided into one hundred equal parts. The value of mercury for use in thermometers is that it does not wet glass, so that it may be used in a fine bore tube without any influence of capillary action, but in comparison with other liquids its coefficient of expansion is comparatively small, so that in order to obtain a reasonably open scale without unduly increasing the size of the bulb very fine bore tubing must be employed in the stem of the thermometer. An advantage of mercury is that, being opaque, it can be readily seen and another minor advantage is the readiness with which mercury can be obtained in a high state of purity by distillation.

Lilium philippinense var. formosanum.—Mr. Grove points out that in the process of reproduction the size of the capsules of this Lily (Fig. 95) has been reduced so that they are not represented as half-size, as stated. The actual length of the capsules is four inches.

Horticultural Exhibition at Namur.—The International Horticultural Exhibition held at Namur, Belgium, from the 28th to the 31st of August, was a great success. It was divided into three sections, viz., cut flowers and decoration; market cultivation; and allotments—all three being well represented. In the first section, the magnificent collection of Sweet Peas shown by M. Carlier, of Forville, was admitted to be far beyond any of the rest, including an infinite variety of sorts arranged with the most delicate taste. The market exhibits, which were in a different building, also showed great merit, the collection of Melons exhibited by the Vilvorde Horticultural College being especially worthy of mention.

Antirrhinum bellidifolium. — The plant exhibited by Mr. T. Hay at Westminster on August 24 (see p.177) is Anarrhinum bellidifolium Desf., and not Antirrhinum bellidifolium, although the latter name was used for it by Linnaeus in *Species Plantarum*. According to the *Index Kewensis*, Anarrhinum bellidifolium Fenzl., is synonymous with A. orientale. The similarity of the two generic titles and the affinity of the plants in these genera are likely to cause confusion in gardens.

American Gooseberry Mildew.—As it appears that some misunderstanding still exists as to the present regulations with regard to American Gooseberry mildew disease, a summary of the orders now in operation affecting Gooseberry and Currant bushes grown in England and Wales is given for the information of growers and dealers. The present position is that outbreaks or suspected outbreaks of American Gooseberry mildew occurring on premises on which Gooseberry or Currant bushes are grown for sale must be reported to the Ministry or to an inspector of the Ministry. Outbreaks on other premises need not be reported, but the Ministry of Agriculture will be glad to arrange for advice to be given to any grower as to the measures which should be taken for the control of the disease. Gooseberry bushes affected with American Gooseberry mildew may not be sold or moved from any premises until all visible traces of the disease have been removed from the bushes.

A Garden as a Present.—Mr. Frank Matley, headmaster of St. Saviour's School, Poplar, for thirty-eight years, and Mrs. Matley, who has been headmistress for eighteen years, have been presented with the title deeds of a garden at Worthing-on-Sea, by the managers and teachers of St. Saviour's School, on the occasion of their retirement.

Scottish Sweet Pea Trials.—In the official report of the trials conducted by the Scottish National Sweet Pea and Rose Society which has now been issued, there are two varieties that were not included in our list of awards published last month; Robin Hinton, a bi-colour raised by Dr. Hinton, and Ruddigore, a blood-red variety, raised by Messrs. Thomas Cullen and Son, each of which received a Certificate of Merit. Intimation is made that thirty seeds of varieties to be included in next season's trials are to reach the Secretary by the end of September, and that no one interested in any variety on trial will be allowed to judge. The blooms will be inspected three times, twice in the growing stage, and finally when staged in the cut state at the show. A maximum of nine points will be awarded on each occasion, and the variety securing the most points will be awarded a Gold Medal, the second one a Silver Medal, and all varieties gaining eighteen points and upwards, a Certificate of Merit.

National Rose Society's Autumn Show.—We would remind our readers that the autumn show of the National Rose Society is being held on Friday and Saturday of this week, the 10th and 11th inst., in the Royal Horticultural Hall, Vincent Square, Westminster.

Partridges and Potato Crops.—In this country such game birds as partridges and more especially pheasants, are not welcomed in the garden, so it is interesting to read in the *Daily Press* that in France it has been decided to prohibit the shooting of partridges in various districts this season on the grounds that they are of supreme importance in the fight against the Doryphorous beetle, which is seriously threatening the Potato crops. Partridges seem to be particularly fond of the pest, and in nine Departments, where Potatos are extensively grown, partridges are to be strictly preserved, while in four other Departments the game bird may only be shot after special permission has been obtained from the Prefect, who has power to withdraw the permit should damage by the beetle become prevalent.

Monkey's Nest in a Bunch of Bananas.—At Penryn, in west Cornwall, a fruiterer found that a small creature, apparently one of the Lemuridae, allied to the monkey tribe, had made its nest of grass and leaves in a bunch of Bananas from Jamaica. The animal was successfully caged, where it crouched in a corner by day, hissing when approached, but was more tractable at night, when it fed on ripe Bananas. It is about six inches long, of grey and white colour, with a rat-like face and paws similar to those of a monkey.

Gardening Lectures in North London.—Under the auspices of the London County Council, a series of lectures on gardening subjects will be given in The Whittington Evening Institute, Highgate Hill, commencing on September 29, and continuing on Wednesday evenings until July, 1927. Mr. E. H. Chitty will give the lectures and demonstrations, and a portion of each meeting will be devoted to answering students' questions and endeavouring to solve their gardening difficulties. The fee for the whole course is four shillings.

Edinburgh Royal Botanic Garden Guild.—Like Kew, Edinburgh has its Guild of past and present employees, and this provides means whereby all may be kept in touch with each other, always for sentimental reasons, often for very practical ones. The Edinburgh Royal Botanic Garden Guild has its *Journal*, and the issue for the present year is now before us, edited by Mr. H. F. Tagg, F.L.S.; this issue is part II of vol. I, and is another reminder of the general upset caused by the war, as the previous and first number was published in 1914. The Committee for 1926 decided that "a first duty is to record in this issue of the *Journal* the service and sacrifice of the members of the 1914 staff, killed in the war," and "a second duty is the publication of a list of past members of the staff and others who have been connected with the gardens." These duties have been fulfilled, and their fulfilment has left little room for those personal notes which are the life of such a publication. An illustration is given of the memorial tablet in the entrance hall of the Laboratory Buildings, Royal Botanic Garden, Edinburgh, together with an account of the memorial service when the tablet—which the late Sir Isaac Bayley Balfour wished to be placed in the entrance hall—was unveiled. Twenty men of the Edinburgh staff "poured out the red, sweet wine of youth; gave up the years to be." Obituary notices of Sir Isaac Bayley Balfour and eleven others connected in various ways with the activities of the Garden, together with the names and addresses of all "eligible for membership of the Guild" conclude an interesting publication.

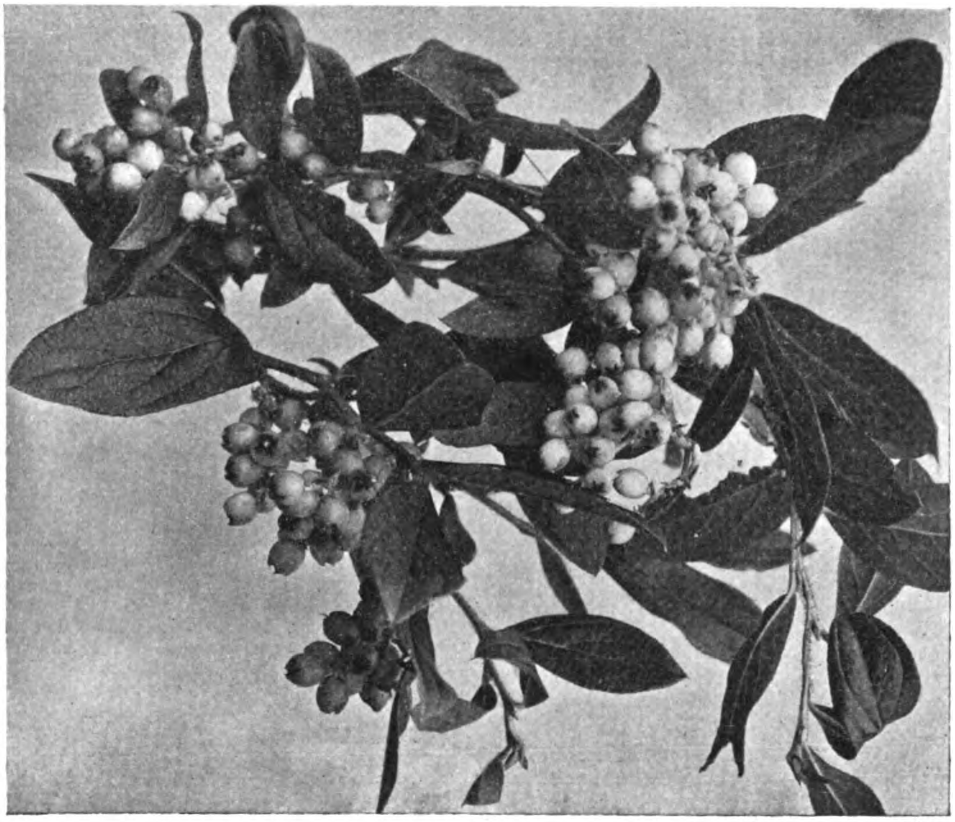

FIG. 99.—FRUITING SHOOTS OF GAULTHERIA VEITCHIANA.

Appointments for the Ensuing Week.—MONDAY, SEPTEMBER 13: United Horticultural Benefit and Provident Society's meeting. TUESDAY, SEPTEMBER 14: Jersey Gardeners' Society's meeting; Post Office Savings Bank Horticultural Society's show. WEDNESDAY, SEPTEMBER 15: North of England Horticultural Society's show (three days). FRIDAY, SEPTEMBER 17: Manchester and North of England Orchid Society's meeting.

"Gardeners' Chronicle" Seventy-five Years Ago.—*Wall Fruit Trees.*—Much disappointment is felt this season that the crop of wall-fruit has generally failed. Last year we heard the same complaints. Apricots are always an uncertain crop, from the early period at which the blossoms appear; but Peaches and Nectarines, blooming later, do not in general suffer so much. Large portions of the best wall in most gardens are occupied with these trees, which, in a favourable season, bear more fruit than most families require, and in unfavourable seasons lead to the disappointment now complained of. Let those who wish to know how this evil is to be remedied refer to the third volume of the "Transactions of the Horticultural Society," page 17, and they will there find an account of a Noblesse Peach tree, which, in the middle of March, in the year 1811, was covered with glass, but there was no flue to afford artificial heat. On this tree fifty-nine dozen were left to ripen, after 412 dozen had been taken off to thin the crop. After that year the crop was limited to fifty dozen, the Peaches weighing from eight to twelve ounces each. The only attention required was that of keeping the tree clear of insects. *Gard. Chron., September* 13, 1851.

Publications Received.—*Plant Nutrition and Crop Production*, by E. J. Russell. Price 12/6 net. *The Ferns* (*Filicales*), volume 2. Price 30/- net. Both published by the Cambridge University Press, Fetter Lane, E.C.4.

The Week's Work.

THE ORCHID HOUSES.

By J. Collier, Gardener to Sir Jeremiah Colman, Bart., Gatton Park, Reigate, Surrey.

Sophronitis grandiflora.—Many plants of this cool-growing, attractive Orchid that have been resting for some time are showing signs of renewed activity, and if necessary, may be repotted at this stage, but any plants that are well-rooted in sound compost should not be disturbed but will be benefited by some of the soil being picked from between the surface roots and fresh living heads of Sphagnum moss and short portions of Osmunda-fibre substituted, as these plants thrive best when the surface moss is fresh and green. Shallow pans without side holes form the most suitable receptacles; these should be well-drained so that the liberal supplies of water necessary during the plant's growing season may pass through easily. This neat-growing and brilliant-flowered Orchid will grow freely when suspended near the roof-glass of the cool Odontoglossum house.

Lycaste and Odontoglossum.—Most Lycastes are growing freely and should be treated liberally, as the plants generally are forming their new pseudo-bulbs and producing a quantity of young roots. The same remarks apply to such Odontoglossums as O. grande, O. Insleayi, O. Williamsianum and others of this type. Neither these nor Lycastes should be sprayed overhead at any time as it is apt to cause the young growths to decay and the leaves to become spotted.

Cypripedium.—Many plants of cool-growing Cypripediums are sending up their flower scapes and should be given every encouragement to produce them as strongly as possible. As the scapes become of sufficient length they should be tied neatly to thin stakes, as if they are allowed to become twisted it will be difficult to cause them to grow erect. The leaves should be cleansed by sponging them carefully with soapy water. As the present month advances the plants should be afforded all the light possible and supplied liberally with water at the roots each time the compost shows signs of becoming dry.

HARDY FRUIT GARDEN.

By W. Auton, Gardener to Viscount Elveden, Pyrford Court, Woking, Surrey.

Storing Fruit.—As the season advances increasing numbers of varieties of Apples and Pears become fit to gather, and they should be carefully handled and stored in the fruit room. The grading of fruit may not be so much the concern of the private grower as the market grower, but even for storing, a rough grading of the fruit facilitates subsequent handling. Bruised or otherwise blemished fruit should not be stored in any case but kept apart for immediate use. Birds are sometimes very troublesome among ripening Apples and Pears and peck a small piece out of each fruit near the stalk. When the trees cannot be netted against them a large proportion of the crop becomes useless for storing. It is essential that fruit should be fully developed before gathering, and unless it is left on the tree till the second swelling is complete it will quickly deteriorate under storage. Apples, Pears and Plums are ready to gather when the stalk can be easily and cleanly detached at its point of junction with the shoot on which it has grown. It is not infrequent for trees to drop a few fruits before their season. These are generally not fully developed specimens, or they may be pest-infested, therefore they should not be regarded as an indication that the whole crop is ready to gather.

Ripening Pears and Apples.—Amongst the varieties of Pears which may now be expected to be ripening, are Williams' Bon Chretien, Dr. Jules Guyot, Fondante d'Automne, Marguerite Marillat and Beurré d' Amanlis. Ripening Apples of dessert kinds include Beauty of Bath, Devonshire Quarrenden, Lady Sudeley, Worcester Pearmain and James Grieve, while culinary varieties include Keswick Codlin, Lord Suffield and Stirling Castle. Later varieties have not yet got the full benefit that the trees can afford them and should be left till quite ready.

Red Spider.—Hot, dry weather is favourable to the spreading of this pest, and in many cases it is difficult to combat it while the fruit is still hanging. So soon as the fruit is gathered from affected trees the latter should be sprayed with a nicotine wash and be heavily syringed, on frequent occasions.

Autumn Watering.—Many fruit trees, especially large, old ones on walls, suffer considerably from lack of moisture at this time of the year, and the importance of thoroughly soaking such borders after the crop has been gathered is often not sufficiently recognised. Despite the cloudiness of the present season, the actual rainfall since midsummer has been abnormally low, and trees which have needed watering to help them finish their crop will still need help in this direction to keep them in healthy and vigorous condition. It is a good plan to fork the surface lightly and use the hose for two or three hours to soak the whole border to its full depth.

THE KITCHEN GARDEN.

By F. Streeter, Gardener to Lord Leconfield, Petworth Park, Petworth, Sussex.

Spring Cabbages.—The ground having been prepared thoroughly and given a good dressing of lime and soot, the planting of the earliest batch of autumn-sown Cabbages should be done forthwith. Allow a distance of eighteen inches between the rows and about twelve inches to fifteen inches from plant to plant in the row. Should dry weather continue, give the soil a thorough soaking and damp the Cabbages overhead early in the evening. Retain sufficient surplus plants in the seed-bed to make good any losses.

Winter-Fruiting Tomatos.—Where the grower has the convenience of a well-heated and light house, a batch of Tomatos is a most profitable winter crop. The seeds having been sown at the end of July, the seedlings are ready for their final quarters. Crock a suitable number of ten-inch pots thoroughly and use the following compost: three parts good fibrous loam, one part of finely-sifted old Mushroom-bed manure, and sufficient coarse sand to render the texture open and porous, adding one six-inch potful of bone meal and one six-inch potful of soot. See that the plants are not dry when they are repotted, and make the soil thoroughly firm. Place a stick up to the trellis to train the plant to, and admit plenty of air and sunlight on all suitable occasions. Endeavour to keep the temperature at 55° by night and 60° by day. Keep all side-shoots removed and the plants free from insect pests

Turnips.—Autumn-sown Turnips to withstand the winter require thinning. Keep the soil well-stirred with the Dutch hoe and damp the rows each evening in hot, dry weather. A liberal dusting of soot and dry wood-ash will greatly assist in keeping down insect pests.

Lettuces.—There is still time to sow seeds of a quick-maturing variety of Lettuce on a south or west border. The latest sowings require thinning, and the thinnings may be grown in old frames, etc., especially where salads are in great request during the winter. It is now the rule rather than the exception for enquiries for saladings throughout the whole year.

FRUITS UNDER GLASS.

By T. Pateman, Gardener to Sir Charles Nall-Cain, Brocket Hall, Hertfordshire.

Cucumbers.—Plants raised from seeds sown as advised during last month will now be ready for planting out, either on mounds or on a prepared border. The house in which they are to be grown should be cleansed thoroughly by washing the whole of the interior with strong soft-soapy water before planting takes place. Once the plants have become established in the new soil it will be desirable to admit air on all possible occasions to promote stocky growth. Stop all side shoots and remove all male blooms, also any female flowers, until such time as the plants are growing freely. At this season of the year it is most desirable to crop in moderation; by taking these precautions the plants may be kept in good health for some considerable time. Cucumbers dislike a cold night temperature, and the night temperature of the house should not be lower than 65°. As the plants advance in growth it will be well to remove any decayed leaves, but do not defoliate them too much at one time. Where the plants of this late batch have not made satisfactory progress make another sowing at once, but much will depend on the weather of autumn if this sowing is to succeed.

Wasps.—These pests are very troublesome in many gardens, and unless means are taken to protect choice fruits much damage will result from them. There are several methods of protecting indoor fruits but none is good from a grower's point of view; perhaps the best means is to cover the ventilators with hexagon netting, but the one objection to this is that during hot weather the current of air passing through the ventilators is greatly reduced and consequently the inside temperature rises considerably; during the period of hot weather a light removable shade will be found to counteract this somewhat, but whatever shade is used it should be removed at the earliest possible moment. Means should be taken to trace the wasps to their nests, which are easily destroyed with cyanogas: all that is required is to place a small quantity in the entrance of the nest when the wasps will all be killed in a very short time.

THE FLOWER GARDEN.

By F. C. Puddle, Gardener to Lord Aberconway, Bodnant, Taly-Cafn, North Wales.

Pentstemon.—The sub-shrubby Pentstemons are indispensable plants for the flower garden, for they may always be relied upon to carry on the display of colour in the flower borders when the early summer flowers are getting past their best; moreover, the various species and hybrids offer a range of colour which justifies their inclusion in most colour shcemes. The smaller-flowered bedding kinds, such as Southgate Gem, Middleton Gem and Kellermannii, will usually withstand the winter out-of-doors. It is, however, a wise practice to propagate a number of plants each year and winter them in frames, for an exceptionally severe winter may cause a heavy mortality amongst the older plants. The large-flowered varieties, of which George Home is perhaps the most popular, can never be relied upon to winter successfully out-of-doors, and it is necessary to propagate a full stock of these sorts annually. The cuttings should be inserted at the present time in beds of a light sandy compost in a cold frame. The frame should be kept close and shaded until the cuttings are rooted, when the young plants should be grown as hardily as possible. If the cuttings are given sufficient space when inserted, the resultant plants need not be disturbed until the time arrives for planting them out in spring.

Shrubby Veronicas.—The majority of these elegant New Zealand shrubs are doubtfully hardy, and many species, together with the garden varieties, which are chiefly hybrids from Veronica speciosa, usually succumb to a severe winter, therefore it is advisable to have a reserve stock in frames. Cuttings for this purpose should now be inserted and treated in the same manner as advised for Pentstemons.

Lawns.—The first half of September is one of the best seasons of the year for sowing lawn grass seeds, especially on light soils, and if it is contemplated to sow new lawns the work should be commenced forthwith. Careful preparation of the ground is very necessary before sowing, for no amount of subsequent work will correct bad preparation of the soil. Care should be taken that the ground is thoroughly free of weeds, and if it is necessary to introduce new soil for the purpose of levelling inequalities, this should be obtained from a clean source and, if possible, of the same texture as the rest of the seed-bed, otherwise the lawn may have a patchy appearance for years. If, however, suitable loam is not available and the cultivator has to rely on soil of another quality, this should be either mixed with the surface of the entire lawn or placed at the bottom of the deeper depressions and covered with a good layer of the soil comprising the seed-bed. After the necessary levelling is completed, the ground should be raked repeatedly and rolled in different directions until it is thoroughly consolidated, and a fine tilth secured, when the seeds may be sown. After well raking the seeds into the surface soil, the whole should be finished off by consolidating the ground with a light roller.

PLANTS UNDER GLASS.

By John Coutts, Assistant Curator, Royal Botanic Gardens, Kew.

Annuals for the Conservatory.—These include such popular and useful subjects as Schizanthus, Clarkia, Godetia and Mignonette. The seeds should be sown about the middle of September in cold frames or in a cool greenhouse. The essentials in the successful cultivation of these plants are, thin sowing, taking care to prick off the seedlings before they are crowded, careful watering and perfectly cool treatment at all times. In their younger stages the plants may be grown in cold frames, but during the winter they should be placed in a cool, airy greenhouse. The seedlings may be pricked off directly into small pots or into pans or boxes until they have attained some size, when they may be placed in small pots. If large specimens of Clarkias and Godetias are required, three or four plants may be placed in a pot, while Schizanthuses are best grown singly. Schizanthus retusus is deserving of more general cultivation, but it is by no means so easily managed as the other kinds. After the initial stages the compost should consist of a good medium loam with enough sand to ensure the free passage of water. If the compost is without the addition of leaf-soil growth will be firm and sturdy, which is important for the successful wintering of the plants. With heavy loams it may be necessary to use leaf-soil to lighten the texture.

Pycnostachys Dawei.—This beautiful, blue winter-flowering plant, when propagated earlier in the season, makes large specimens for the beds. The plants should now be in their flowering pots, those ten inches in diameter being suitable. If smaller plants for the stages are required, a batch should be rooted at this time: stopped on two occasions, they will make good bushy plants for flowering in six-inch pots.

Coleus thyrsoideus.—Large specimen plants should now be placed in their flowering pots. If small plants are required for the plant stages, a batch should now be rooted and treated in the same way as advised for Pycnostachys.

Lachenalia. — Lachenalia bulbs should be potted sometime during September. They should be turned out of their old pots and sorted into different sizes, selecting the largest specimens for potting for flowering, while the small bulbs should be placed in pans or boxes and grown on for next year. The flowering bulbs are best grown in five-inch pots, placing five or six bulbs in a pot. Lachenalias were popular at one time for furnishing hanging baskets, and although they succeed well under this method of cultivation, I always considered they were not seen to best advantage when suspended above one in baskets. The compost should consist of a good, medium loam, with the addition of a little old mushroom-bed manure and enough sand to render the soil open and porous. The plants may be grown in cold frames until they are coming into flower, when they should be removed to the greenhouse; careful watering is necessary until they have made a quantity of roots and have started into growth.

FOR NORTHERN GARDENERS.

By A. T. Harrison, Gardener to the Marquis of Ailsa, Culzean Castle, Maybole, Ayrshire.

Strawberries. — Where large numbers of Strawberries are grown in pots for forcing, the earliest runners will have been placed in their fruiting pots some time ago; later plants for succession should now be potted on and stood in the open to thoroughly ripen and plump up their crowns. A compost of good turfy loam, with the addition of bone-meal or old dried cow manure gives excellent results. A temporary erection of stakes and rails should be in readiness during showery weather, so that sashes may be placed over the newly-potted plants should there be any likelihood that the soil will become saturated by rain; remove the lights when they are not required. The main planting in the open should also be attended to at this time, on ground that has been well prepared and enriched by double digging, and the addition of well-decayed manure, or, if procurable, the same quantity of turfy loam chopped up roughly, to which may be added a generous supply of bone-meal. In old gardens the addition of turf is an excellent means of renewing the fertility of the soil for most crops, and ground treated with it for the Strawberry crop is by no means exhausted when these are removed, and remains in good heart for a number of years.

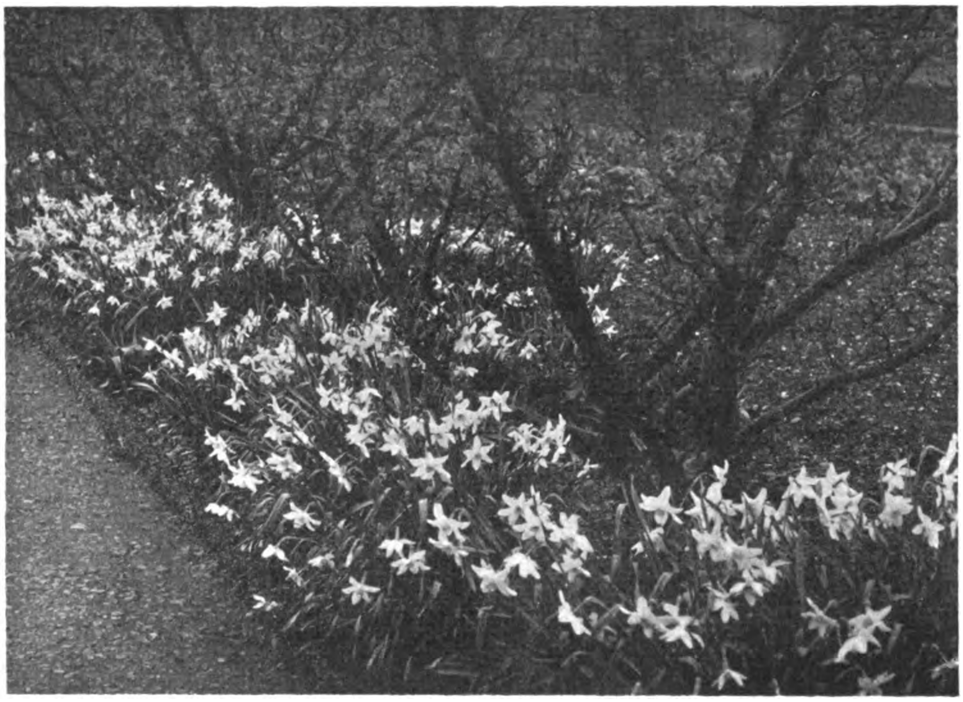

FIG. 100.—A COLONY OF DAFFODILS IN THE KITCHEN GARDEN AT BROCKET HALL.
(see p. 206).

Late Peas.—Sowings of late Peas, such as Autocrat and Gladstone, are sometimes disappointing, the plants coming into flower about the end of August and promising well for late supplies, but with the shortening days the pods do not fill. To gain full advantage of the late crops the growing points of the plants should be pinched off to favour the development of pods already formed. The site for late Peas should also be considered at sowing time, selecting an open situation so that the plants may receive the full benefit of the sun's rays during September. Early varieties of Peas sown for use in autumn come to maturity during this month and do not require the same assistance, but the flavour of the later varieties mentioned is much superior and a little extra trouble is well spent in securing them.

Early Fruits.—The early varieties of Apples and Pears now require to be harvested as they are ripe and dropping fast. Early sorts are not, as a rule, good keepers, and should be used for cooking or preserves so soon as practicable, or disposed of in good time while they are sound, as it is a pity to take up valuable space in the fruit room with varieties that will not keep. Apple Lord Grosvenor is a typical example of the sorts referred to, and is one of our heaviest cropping, early, cooking varieties, some of our trees this season being laden almost to breaking point, but the fruits need to be used at the beginning of October. The great advantage of these early sorts is that they save the grower from using late keepers, such as Lane's Prince Albert and Bramley's Seedling until such time as they, in turn, are nearing the gathering stage.

Bulbs for Forcing.—These are now coming to hand, and they should be potted or boxed forthwith in readiness for their season of growth, for while it is true that bulbs keep fresh out of the ground for a long time, and to all outward appearance do not suffer, it is the earlier planted bulbs that respond most rapidly to forcing conditions, and pots or boxes of bulbs that are well filled with roots give very much better results. So soon as the pots or boxes are filled and labelled, the soil should be well watered and the receptacles placed in a cool, shaded spot, and carefully covered either with finely-sifted ashes, or what is infinitely better, fine sand, to a depth of several inches. Place rough boards round the bed to keep the plunging materials in position, and leave parts of the receptacles exposed. If the labels are attached to stakes about a foot long, they will show above the plunging materials, and be more easily found when the time comes to remove them.

ALPINE GARDEN.

PHLOX DOUGLASII.

This exquisite species is, to my idea, one of the very best of the alpine forms; its mat of moss-like growth is covered or studded with clear, lavender-blue flowers, and a well-flowered clump will be prominent amongst the choicest selection of rock plants.

The slightly fragrant flowers are produced during May and June on one-inch stems; given a partially shaded position high up in the rock garden, a thoroughly drained sandy soil with a surfacing of chippings, and P. Douglasii will be quite happy.

A good pan of this species in flower is a feature of any alpine house, the colouring being exceptionally clear and chaste; Lilac Queen is a new form of P. Douglasii, and equally beautiful.

Propagation of this Phlox and its varieties may be effected by cuttings inserted during the summer. *Ralph E. Arnold.*

ANEMONE TRIFOLIA.

Though seldom seen in gardens, and not often in nurserymen's lists, the subject of this note is one of the choicest and easiest managed of the alpine Anemones. It is apparently allied to A. nemorosa, from which it differs in its almost uncut, more leathery, trifoliate leaves, which have rigid stalks, three inches long, and retain their green colour until well into autumn. The lovely creamy-white flowers, each about one inch across, are elegantly poised above each leaf and, appearing in April, they carry on the display until summer is approaching.

There are few more delightful objects in the spring garden than a wide colony of these pretty Anemones blooming in the part shade of shrubs or woodland trees. A robust grower in any well-drained soil, A. trifolia makes such a dense mass of fibrous and rhizomatous roots that it is wisest to plant it in a spot by itself. It is a reliable and prolific bloomer and never seems to need division or any other attention. Planting should be done early in the autumn. *A.*

WOODLAND GARDEN.

ROSA ALPINA

This charming little Rose has been growing in the dry, poor soil of an open, sunny part of the woodland garden here for many years, and it has never failed to be other than delightful. This species has not grown taller than four feet, it seldom runs to any extent, and the only attention it ever receives consists in the removal occasionally of one or two of the oldest growths.

The younger wood of R. alpina is a pale green and entirely thornless. The foliage is of the same tint, suffused with a shade of emerald, and this makes a most pleasing background for the blossoms, which are a bright crimson with a bold ring of golden anthers. The flowers are followed by long, narrow, bottle-shaped fruits, which ripen to a vivid red before the foliage changes colour, and they remain to afford another beautiful effect in combination with the leaves when these assume their autumnal yellow. There are several forms of R. alpina; Farrer mentions a prostrate one for the rock-garden, but this I have not seen. *A. T. Johnson, Ro Wen, Conway.*

GERANIUM PHAEUM.

Of rather insignificant appearance, this Geranium is well worth a place in the woodland or wild garden, or even in the herbaceous border. It will at least be of distinctive appearance and lend variety to a collection of plants. Its flowering season is May and June.

It grows from eighteen inches to two feet high and produces brownish-black flowers with a pale dot at the base of each petal; the leaves are five to nine-lobed and toothed; the stem is round and branched.

The plant is a native of central and western Europe, and is naturalised in some parts of Britain. *Ralph E. Arnold.*

FLOWER GARDEN.

CONVOLVULUS MAURITANICUS.

This trailing species is a delightful plant throughout the later summer and autumn, and has none of the defects common to many of its tribe. C. mauritanicus is a useful plant for growing near or amongst early-flowering subjects, such as Aubrietias and dwarf Iberis, for by the time the latter are cut back or past blooming the Convolvulus will be coming into its best, its long and elegant trailing shoots radiating in all directions for perhaps a couple of feet.

The kidney-shaped leaves are a dull green and silvery with fine hairs; the large flowers in the characteristic funnel-shape of the family, are a clear lavender-blue. There are forms in which the colour is much bluer than that of the type usually seen, C. m. atrocoeruleus being perhaps the finest.

C. mauritanicus needs a warm, thoroughly drained, gritty soil, and a sunny aspect. Under such conditions it will withstand up to 20° of frost, but where there is any doubt as to its surviving the winter a pot of cuttings may always be held in reserve in a cold frame; cuttings strike very readily at this season. *A. T. J.*

HARDY FLOWER BORDER.

GILLENIA TRIFOLIATA.

This summer I saw an unusually fine plant of Gillenia trifoliata in an herbaceous border, and, like other plants in the garden, it showed the value of deep cultivation and thorough manuring of the ground before the plants were placed in the border. It is about three years since this border was formed, and from a small plant the Gillenia had increased and made a fine clump, quite five feet in height. I have known G. trifoliata for very many years but had never seen a single plant so fine, for it was covered with hundreds of its delicate white and pink starry flowers.

There are only two known Gillenias, G. trifoliata, the subject of this note, and G. stipulacea. The former is the better of the two, G. stipulacea differing mainly in the size of the stipules and in being more pubescent. It has also fewer and smaller flowers. In its native home in the United States of America, G. trifoliata is known as Indian Physic and Bowman's Root, the other species being called Indian Ipecac. G. trifoliata has also been known as Spiraea trifoliata, and Britton and Brown have departed from the best known title of Gillenia and called the genus Porteranthus, a name not likely to be generally recognised in this country. Both the species are natives of woodlands and quite hardy. G. trifoliata flowers from May onwards, and is at its best in the north about July. *S. Arnott.*

BULB GARDEN.

TULIPS.

In addition to their decorative value in the formal beds of the flower garden, Tulips are invaluable when grown in the less-frequented parts of the garden. On each side of a central kitchen garden walk mixed Tulips were planted. In this case an equal number of early- and late-flowering bulbs were mixed and the result was most satisfactory. The borders were furnished with flowers during a long period, and good material was available for the supply of cut blooms. It is essential to secure good bulbs; the so-called cheap mixtures obtainable late in the season cannot be relied upon to produce really good blooms.

Narrow borders at the foot of new walls may be made attractive by planting Tulips such as Bleu Celeste (syn. Blue Flag), a late-flowering, double, purple-mauve variety, with large flowers of good substance. Excellent Darwin Tulips for the same positions are Bleu Aimable, dark heliotrope, and Dream, mauve. Borders containing late-flowering herbaceous subjects may be made attractive during the early season by planting scarlet Tulips, such as Couleur Cardinal and Prince of Austria (perhaps not true scarlets), but excellent for the purpose suggested; also many others.

Tulip Artus, scarlet, flowering over a carpet of the Munstead strain of Polyanthus is very effective, and forms one of the few instances where lemon, yellow and scarlet flowers may be associated. Garden vases may be planted with suitable varieties of Tulips. It is generally safe to plant the bulbs direct into the vases, but where the position is very exposed or an effect is required on a certain date, the bulbs may be planted in pots and transferred to the vases as desired.

Yellow varieties are very charming when growing in old, moss-covered vases or shallow bowls.

Bold groups of the Cottage Tulips are attractive between dwarf shrubs. These Tulips are particularly adapted for the supply of cut flowers. The Darwin varieties are most useful during the latter part of May, at a time when many early-flowering bulbous subjects have passed out of bloom.

Yellow Tulips and blue Forget-me-nots are most attractive in beds and borders, whilst pink Tulips, springing from a carpet of white Arabis, are always admired.

It is wise to thoroughly prepare the ground by deep digging, and heavy soils should be improved by adding leaf-mould, or road grit, and decayed manure. Plant all the bulbs at an even depth to ensure the simultaneous production of the flowers. On light, dry soils, plant the Tulips three inches deep, but on heavy or wet soils, a depth of two inches will suffice. Do not plant where Tulips were grown the year before unless new soil has been prepared.

When bulbs are planted year after year in the same beds or borders, the ground should be dug two feet, or more, in depth, bringing the bottom soil to the surface. By this means thorough drainage is secured and fresh soil made available for the plants. *C. R.*

BULBS FOR CUT BLOOMS.

As Daffodils and Tulips are in demand during the early spring for floral decorations indoors, it will save spoiling the beds in the flower garden, when they are in their full beauty, if special plantings are made for the purpose in the kitchen and vegetable quarters, where odd places may be found for them.

Some of the less expensive varieties of both flowers are admirably suited for supplying cut blooms, and they may be set along the borders of the kitchen garden, under fruit trees, such as is adopted at Brocket Hall (see Fig. 100), Hatfield, Hertfordshire, the residence of Sir Charles Nall-Cain.

The bulbs serve a double purpose; they not only provide valuable material for cut blooms, but they make the kitchen garden interesting at a time of the year when bright flowers are doubly appreciated. The Daffodil shown in the illustration is Narcissus White Lady, a variety of the Leedsii section, a flower of perfect form, and with broad, white perianth surrounding a dainty, canary-coloured cup that has a crinkled edge. In addition to its freedom of blooming, this variety is delicately scented, and as the flowers are produced on long stalks, it is charming for furnishing vases in dwelling rooms. Other Narcissi suited to the purpose are Emperor, Barrii conspicuus, Mrs. Langtry, Golden Spur, Pheasant's Eye, ornatus, Horace, Sir Watkin, princeps, Waterwitch, Lucifer, Whitewell and Horsfieldii.

Of Tulips, there is a wealth of beautiful varieties that are reasonable in price, such as Clara Butt, Pride of Haarlem, Harry Veitch, Farncombe Sanders, Safrano, Vermilion Brilliant, Couleur Cardinal, White Swan, Loveliness and Vuurbaak.

SMALL BULBS FOR FORCING.

The forcing of such bulbs as Hyacinths, Narcissi and Tulips for conservatory and room decoration during the early months of the year, is sure to receive attention, but sufficient importance is not always given to the possibilities of the smaller bulbs grown in little pots for the decoration of the front of the plant stages or for standing on small tables in living rooms.

Cultural details do not differ from those employed in the growing of larger bulbs, except that, on the whole, they will not submit to quite so much forcing, but as their natural season of flowering is fairly early, there is no need for this, and under quite cool treatment they are sure to flower early if the bulbs have been potted in good time and have made plenty of roots.

Crocuses are excellent subjects for small pots, and the old variety Cloth of Gold may be had in flower at mid-winter with very little trouble. Some of the larger and more showy Dutch varieties will easily follow this under similar treatment and will make a charming display of colour during the early part of the year.

Iris reticulata is a delightful early flowering plant for growing in small pots. Its natural flowering season out-of-doors is February, and very little encouragement is necessary to anticipate this by a few weeks. The common blue and white Grape Hyacinths, Muscari botryoides coeruleum and album follow these in season, and are highly attractive when grown in small pots together with Chionodoxa Luciliae var. sardensis and Scilla sibirica as companions.

The Babianas with their deep green, compact foliage and blue, rose and crimson flowers, are excellent little pot plants if grown in a cold frame and not introduced to even gentle warmth until March.

The dwarf Star Tulip, Calochortus Benthamii, with its charming, cup-like flowers, vivid yellow with dark blotch at the base, is also a delightful little pot plant, but should be kept in a cold house, when it flowers at about the end of April. Similarly, the Sparaxis is a gem for small pots, and it is difficult to imagine anything more striking than the combination of scarlet and orange.

Milla uniflora and its variety violacea are particularly valuable for forcing in small pots, and as the flowers open in succession they remain in beauty over a considerable period. These small bulbous plants are an asset to the spring-flowering scheme in the conservatory, and give an added interest by their simple gracefulness. *A. P. C.*

ROSE GARDEN.

ROSE SALMON SPRAY.

This Rose is of Australian origin, and was sent to Wisley for trial by Messrs. Hazlewood Bros., nurserymen, Epping, New South Wales. On the light sandy soil of the trial grounds it has proved a free-growing variety with good foliage, which is mildew-proof.

The sprays of semi-double flowers, which are of a pleasing salmon colour, the reverse of the petals being tinted carmine, are borne on strong, erect shoots. The flowers are slightly scented and when cut last well in water, making it a useful variety for the decoration of large vases.

This Rose received the Wisley Rose award, Class 2, in the trial. It should prove a good bedding Rose where this colour and form of flower is favoured.

ROSE ETOILE DE HOLLANDE.

Although this variety has been in commerce for a number of years, its merits as one of the best dark red, sweetly-scented Roses has not been fully recognised. The plant is of free, erect habit, and has dark red buds opening to brighter red. It is one of the few Roses that does not turn blue when passing out of flower.

The blooms are of medium size, whilst the perfume is rich and sweet. During a recent conversation with Mr. Heyde, the President of the National Rose Society of New South Wales, from Sydney, N.S.W., he informed me that this was one of the most popular Roses in Australia at the present time.

A group that was planted here this past season has, so far, been proof against mildew and black spot. This bears out my experience with this variety under more trying conditions, when I used it as a bedding variety in Greenwich Park. No lover of Roses should be without this charming variety. *R. Findlay, Wisley.*

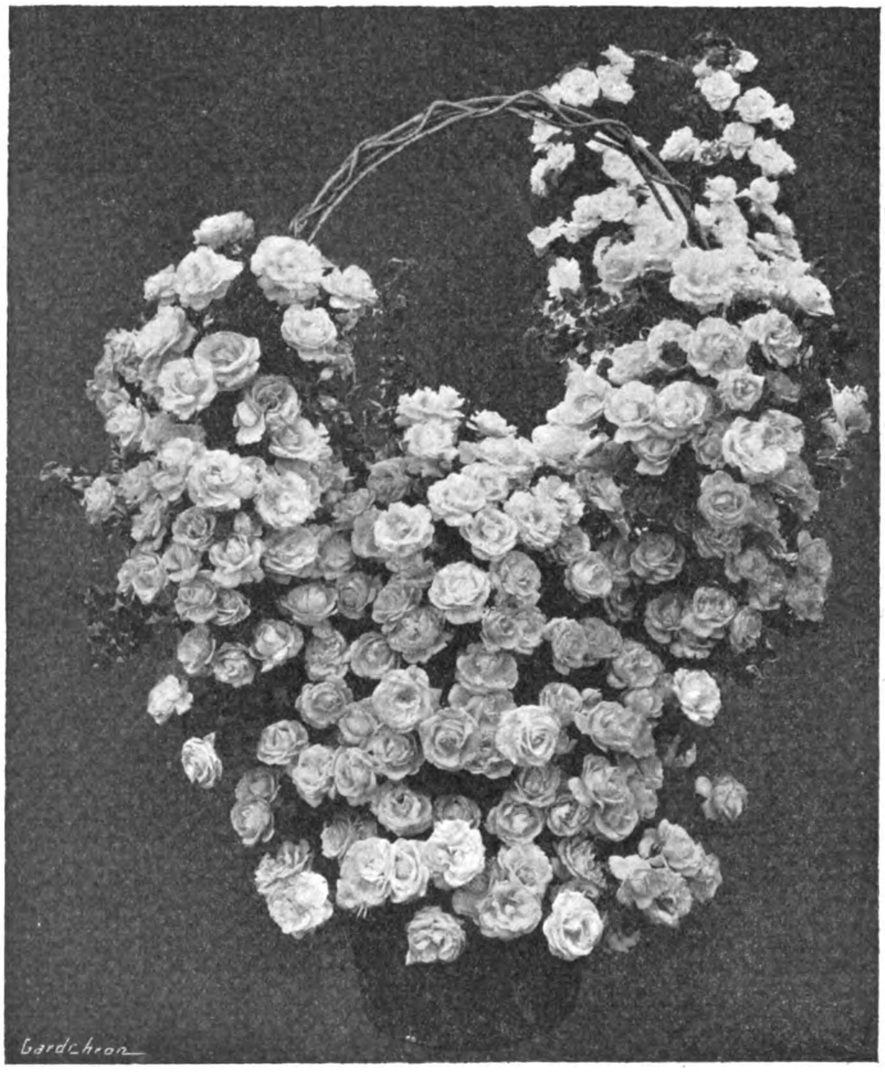

FIG. 101.—BASKET OF ROSE SHOT SILK EXHIBITED BY MESSRS. ALEX. DICKSON AND SONS AT SOUTHPORT SHOW.

(see p. 197.)

ROSES AT KEW.

During a recent visit to Kew, the Roses were a source of great attraction. These beds, the majority of which have been planted within recent years, are a real pleasure to look at, either from a cultural point of view or from the selection of varieties that are most adapted for garden decoration. From the latter point of view there does not seem to be a poor-growing variety amongst them.

That popular variety, Betty Uprichard, which is one of the best Roses for garden decoration, was very fine. Madame Leon Pain, although not of recent introduction, is deservedly popular. Joanna Bridge, a variety with pale straw coloured blooms, makes a magnificent bed; the individual flowers are not very full-petalled, but it makes up for that weakness by its profuse, erect-flowering habit and clean, healthy foliage. Souvenir de Claudius Pernet is a delightful clear yellow but this variety requires abundant sunshine to do it justice.

There were plenty of flowers on that fine old Rose, Caroline Testout; the large, double, clear, rose-coloured flowers of this variety are always delightful. Mrs. H. Morse, Cynthia Forde, James Walley, Ophelia and Madame Butterfly were all good and may be recommended for general garden decoration.

Lady Alice Stanley and Molly Sharman Crawford were especially fine. Amongst others noted mention may be made of the old variety General McArthur. Although this turns somewhat blue when passing out of flower, it is still worthy of a place in the Rose garden.

Lady Pirrie, Etoile de Hollande, Mrs. Wemyss Quin, Miss C. E. van Rossem and Golden Emblem were all doing well. The last seems to have a little of that troublesome defect of dying back, but not so much at Kew as in other parts of the country.

These are only a few of the numerous excellent varieties noted. The plants are all in splendid condition and give promise of providing a great display during September and October if we are favoured with a good autumn. *R.*

NOTES FROM EDINBURGH.

With the advancing season, brilliant displays of colour are less frequent, but in the Erica family we have still some admirable species which add beauty and attractiveness to the rock garden in autumn. Large groups of Erica cinerea rosea and the variety Rose Queen contrasted with E. cinerea alba minor, are at their best, and although they are both common rock garden plants they are too often absent from collections.

E. vagans var. St. Keverne, with its large dense heads of pink flowers, and the delicate soft pink E. Maweana are profusely blooming and very attractive.

In the same family Calluna vulgaris alba on a high mound is conspicuously showy with white snowy spikes, which are greatly admired, especially by those who regard white Heather as the emblem of good luck. Another very pretty variety is tenuis, having flowers of a deep shade of pink. Recently, greater interest has been taken in the genus Gentiana, due no doubt to notable introductions from China. Among the autumn-flowering species are G. Farreri, G. sino-ornata and G. Arethusae, all Chinese species.

G. Farreri is indeed a great favourite and, although in some districts rather difficult to grow, is worthy of every care and attention. The flowers are of a beautiful blue colour and when seen in a group have a most wonderful effect. A moderately moist situation with good drainage suits the plant best. It should be grown in a rich compost.

G. sino-ornata is somewhat darker in colour than the former, but, by many people, as much admired. In northern districts it grows exceedingly well, and by division of the plants in February or March, good flowering specimens may be obtained the same season, commencing to flower at the end of August or the first week in September. It has been found that well-rotted manure added to a compost of turfy loam and leaf-mould favours the production of stem roots from which the plant derives most of its nourishment. A moist situation is essential, but attention should be paid to drainage.

G. Arethusae, not quite so common in our gardens, is worthy of mention. In winter it resembles a Saxifrage, having a compact rosette of dwarf, firm, dark-green stems, and as the season advances the plant produces from these many trailing shoots which in August produce delicate pale blue flowers that are somewhat smaller in size than those of G. sino-ornata. The plant is a good grower and easily propagated by division.

Phyteuma comosum, from the Alps, and at present in flower, is a wonderfully attractive dwarf plant. It is at home, and shows itself to greatest advantage, when grown on a wall. The beautiful, umbellate inflorescences of pale lilac and purple flowers make it unique.

The New Zealand plant, Pratia angulata, has many qualities to recommend it as a useful plant in the garden. Of a creeping habit and very floriferous. it adapts itself to rock-work, and its Lobelia-like flowers show up admirably from among the dark green foliage. It may be introduced into lawns, and seldom fails to establish itself in the turf, so much so that in a few years the lawn becomes dotted all over with its small, white flowers. It continues to thrive and blooms profusely a day or two after the grass has been cut with a lawn mower. Cutting has no bad effects and no difficulty is experienced in this respect.

Polygonum affine, a native of the Himalayas, is an excellent plant for autumn-flowering. It has a somewhat woody root-stock and its rosy-red, erect spikes of flowers stand well above the leathery, spreading foliage. It may be used either as a rock plant or for bedding purposes with great effect.

One of the Gum Plants of California, Grindelia cuneifolia, has produced some excellent blooms of a showy, bright yellow colour, which are most attractive among the sticky, rigid leaves. It is best suited to a warm, dry situation.

Gilia californica, in a sheltered position, has flowered to the extent of almost concealing the foliage. Its procumbent habit and Phlox-like, rose-coloured flowers, make it quite a favourite.

Campanula Vidalii, a native of the Azores, is an outstanding plant of the Campanula family. Although not quite hardy in the north, it grows and flowers in sheltered conditions. The white, nodding flowers are borne on long racemes, branching from the base of the plant, and look very pretty among the dark green, glossy leaves.

A group of Phygelius capensis, in appearance like a giant Pentstemon, has made a wonderful display. It has drooping, scarlet, tubular flowers. This Phygelius, being a native of the Cape of Good Hope, is able to endure plenty of drought, and makes an excellent subject for growing in dry situations.

The Spanish Broom, Spartium junceum, is a most effective shrub for autumn-flowering. The fragrant, yellow blooms can be seen from a great distance, and the rush-like, leafless branches make it even more attractive.

Stenanthium angustifolium, an uncommon plant in gardens, is in full bloom. The long racemes of delicate white flowers are strikingly graceful, and the plant is very handsome in partial shade in the herbaceous border. *A. McCutcheon.*

GARDEN NOTES FROM SOUTH-WEST SCOTLAND.

Who was Zéphirine Drouhin — maid or matron? If her personal appearance justified the bestowal of her name on the Rose that bears it, her charms must have been, like Olivias'

> " Beauty truly blent, whose red and white
> Nature's own sweet and cunning hand laid on."

The said Rose combines delicate colour with delicious fragrance; it flowers freely, early and late, has a faultless constitution and no thorns. Were I asked to prescribe for one who had but room in his plot for three Roses, I should name Lady Pirrie, General McArthur and Zéphirine Drouhin—a trio, not indeed up-to-date, but to be trusted as old friends.

Coriaria terminalis was one of Sir Joseph Hooker's finds in Sikkim, and was introduced by him to this country more than seventy years ago, yet it has never become common in British gardens. It is a pretty object in August, when its long, arching shoots bear terminal racemes of shining fruits. The male and female flowers are borne on separate sprays; both are equally inconspicuous until the female flower has been fertilised, when its petals swell and form a translucent yellow berry. The fruits have a sinister reputation as being poisonous, although birds eat them with impunity. Moreover, a young grandson of mine confessed to having devoured and enjoyed two whole bunches of the berries, and was none the worse (except morally, for they were strictly *fruit défendu*). I have since then sampled them and found them agreeably sweet and juicy; but I do not propose to repeat the experiment so long as there are plenty of Gooseberries.

It came as a surprise to read that, at a recent flower show of the R.H.S., an Award of Merit was conferred on Allium sphaerocephalum. Not that the merits of that plant are unworthy of recognition—far from that—but because official recognition of them should have been so long withheld. So far back as 1794 this Allium was figured in *The Botanical Magazine*, tab. 251, and in some Scottish gardens it has long been a favourite, both with those who grow it and with bumble bees, which feast somnolently on the swaying crimson heads.

Among recent additions to the list of imported plants of the Onion family, Allium Beesianum deserves a place in the choicest collection, bearing in August drooping heads of bright blue flowers on fifteen-inch, wiry stems. On the other hand, A. Bullyanum is a disappointing thing. It carries, to a height of two feet, large, pointed flower heads of a promising appearance when in bud. but opening as a sprawling bundle of dingy purple, green-centred flowers.

That fine South African Irid, Antholyza paniculata is apt to claim too much room in the border at the expense of less robust neighbours; but it is a choice subject for woodland. Planted in open spaces where it may get a full share of sunshine, its green, sword blades are attractive throughout summer until in August these are crowned with brilliant sprays of scarlet flowers.

Tritonia Pottsii, more commonly known as Montbretia, spreads freely in woodland, but becomes too dense to produce a fair complement of blossom; whereas the hybrid T. crocosmiflora behaves differently and gives plenty of bright flowers. Rabbits avoid all these three plants, which is surprising in view of the havoc they work on many other Iridaceae—the Crocus, for instance. *Herbert Maxwell, Monreith.*

AUGUST FLOWERS AT HAMPTON COURT.

The gardens at Hampton Court exercise a perennial fascination to the general public and, during the past month, a large number of the many visitors have spent a deal of their time admiring, often with critical knowledge, the many floral beauties set out in the famous grounds. After a long acquaintance with Hampton Court, in good seasons and bad, and at various times of the year, I feel that the gardens have never before been so beautiful during August as this year. This is not due solely to a kindly season and a copious water supply. for there are abundant evidences of increased attention to cultivation, with admirable results.

The traditions of Hampton Court with regard to tasteful yet showy flower associations are fully maintained, and its attractions have been increased. The King's Privy Garden, for long the Cinderella of Hampton Court, has, of late years, been steadily improved and now nears perfection. It has been found advisable to bar access to the grassy glades of the Alley of Spring and the Alley of Autumn from the walk to the Orangery, but the consequent preservation of the grass had given them an added charm; while the Yew Tree Walk, which is gravelled, provides sufficient opportunities for admiring the charm of the garden. The adjoining sunken garden, known variously as King Henry VIII's garden, the Dutch Garden, and Water Garden is full of charm in its limpid. mossy fountain and generous patches of Verbenas, Montbretias, Stocks and Asters, with stately Hollyhocks in the background.

The need, I would say necessity, in a garden such as that at Hampton Court for fragrance, has not been overlooked, and tall Heliotropes, rising above the low boundary wall of the Orangery enclosure, deliciously scent the air, while alongside the Broad Walk more Heliotropes with Mignonette, perennial Phloxes, Bouvardia Humboldtii, Sweet Peas, Stocks, Scabious, Sweet Alyssum and other fragrant flowers add sweetness to beauty. A large bed of Heliotrope growing alone is somewhat sombre, but when, as at Hampton Court, the standards are associated with the bright yellow flowers of Streptosolon Jamesonii or with tall plants of a rich yellow Celosia, the effect is admirable.

In the large flower beds there are many successful combinations, especially those in which tuberous-rooted Begonias are prominent. The free-flowering Begonia Commandant Felix, alternating with Leucophytum Brownii and edged with dwarf white Alyssum; the rich crimson Begonia Burgomaster Max, with an occasional plant of the silvery-leaved Centaurea candidissima and also edged with Alyssum, make charming beds. Begonia Berlin is of rather taller habit, and approximates the B. Lloydii type, and is to be seen alternated with Leucophytum Brownii and bordered with a large-flowered Mignonette, which yields a delightful perfume.

One of the most successful beds of one sort of plant is that of Pelargonium (Geranium) Maxim Kolvalesky, a very large bed of brilliant golden-orange flowers, which, lightened by the slanting rays of the setting sun, present a brilliant sight. Towards the river and by the side of the Broad Walk there is another noteworthy bed, and this is well filled with Pelargonium Mons. Hammelin, a zonal Pelargonium of King of Denmark style, bearing large trusses of single, salmon-coloured flowers which do not burn in full sunshine. Large plants were bedded out and their use has given a lovely effect.

In the herbaceous border generous groups of Hollyhocks have long been admirable in their tall stateliness. These are mostly double-flowered varieties of distinct colours, and now ten feet in height; they are still bearing well-shaped flowers of great beauty. Helianthemums in good varieties are very effective, while a large clump of Rudbeckia laciniata fl. pl. provides a mass of rich golden colour. Aconitum Napellus (pyramidale), six feet in height, is still in full bloom. One of the largest flower beds in the grounds, filled with Sweet Peas, now just over, has for a considerable time been exceedingly beautiful. A companion bed devoted to Dahlias is at its best. Various types are grown, and it is particularly interesting to note that nearly all the Cactus varieties at Hampton Court produce their flowers well above the foliage. The chief Cactus sorts are E. Jackson, Mrs. Landale, Mauve Queen, Treasure and Fred Wenham.

The famous Long Border was never more beautiful than throughout last month, when it contained a fascinating variety of flowering plants grouped with consummate skill. At the end, by the doorway leading to the Maze, and the newer golf putting greens and tennis courts in the old Tilt Yard, a grouping of Nicotiana affinis and Bouvardia Humboldtii, with tall red Celosias, is particularly charming. In other parts of the border there are brilliant groups of Salpiglossis, Phloxes, Celosias of various colours, Asters, and some magnificent plants of Hydrangea paniculata grandiflora. *A. C. B.*

TREES AND SHRUBS.

RHODODENDRON CHASMANTHOIDES.

This species (Fig. 102) was first discovered by Soulie, and subsequently introduced by Forrest, from Tzeku, in W.N.W. Yunnan, in 1904. It grows wild at an altitude of rather over ten thousand feet and makes a pretty shrub up to eight feet in height.

As will be seen on reference to the illustration, the flowers are very widely expanded; the rosy-lavender colour is brightened by the cluster of well-defined spots on the upper segments, while the long, white filaments add to its beauty.

At the show of the Rhododendron Society at the Royal Horticultural Hall, Vincent Square, on April 27 last, a beautiful spray of this species won the second prize for Mr. J. C. Williams in the largely-contested class for a spray of any species of any sub-series of the R. Triflorum series. *B.*

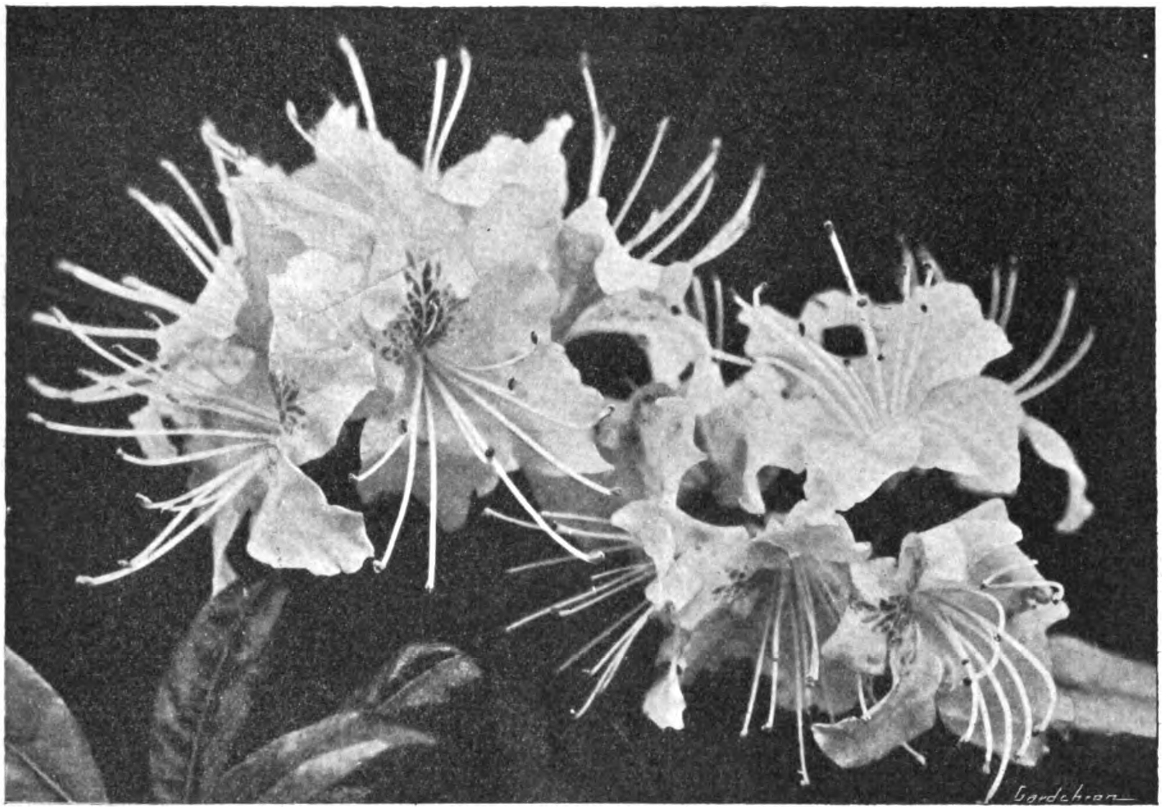

FIG. 102.—RHODODENDRON CHASMANTHOIDES.

EVERGREEN SHRUBS FOR WALLS.

Ceanothus thyrsiflorus, C. rigidus, C. papillosus and C. Veitchianus are all beautiful blue-flowered shrubs and valuable for growing against both south and west walls.

Choisya ternata (Mexican Orange) is most beautiful in flower; it is suitable for planting against east and west walls, and flowers freely in either situation. Corokia Cotoneaster is pretty when covered with its star-shaped, yellow flowers, and thrives in a hot position. Escallonias are good evergreens, especially E. macrantha, a plant of quick growth and graceful habit. E. rubra will attain to twelve feet and is the hardiest of all the evergreen species; the flowers are deep red. E. exoniensis, the hybrid between E. pterocladon and E. rubra is a free-flowering, rose-coloured Escallonia, easy of culture and thrives in any position, except in heavy shade. Garrya elliptica is an evergreen shrub of rapid growth and bushy habit, and from December to February it is covered with silvery grey catkins. Griselinia littoralis, a New Zealand evergreen shrub, makes a fine wall plant in a sheltered locality. In many gardens it is quite hardy as a shrub in the open. Jasminum primulinum is a climbing shrub, eight feet or more high, and suitable for training on walls. It is apt to be killed in severe weather and requires full exposure to sun; this Jasmine should not be planted in rich soil or it will make too much growth and produce few or no flowers.

Lonicera Henryi and L. japonica are two free-flowering, straggling shrubs or climbers, both evergreen in most localities. The Myrtle, M. communis is one of the best subjects for the purpose. Osteomeles Schwerinae in a hot position never fails to produce its clusters of white flowers. It is of very distinct appearance and graceful habit. Pittosporum crassifolium is a dense, evergreen shrub or small tree and produces clusters of very fragrant flowers. It is a native of New Zealand but does not flower freely in this country.

Pyracantha coccinea is an exceedingly good wall shrub, and grows to a height of twelve feet or more. The flowers are white and open in the beginning of June; the berries are a brilliant red. This species is quite hardy in the open when once established. P. angustifolia is inclined to be rather tender, but it will succeed against a warm wall. The fruit is a brilliant orange-yellow when ripe. I have seen berries on this species long after those of P. coccinea have fallen. Trachelospermum jasminoides is an evergreen climber of straggling habit growing to ten feet. The flowers, which appear in July, are very fragrant. This shrub needs wall protection and does very well if planted in sandy loam. Viburnum Tinus (Laurustinus) is perhaps the most useful of all evergreen shrubs, and is often in flower from November to March. It is a dense-habited shrub, growing to a height of ten feet, and often forms a bush ten feet in diameter. V. macrocephalum is only partially evergreen but it does very well on a wall in a sheltered position, and in some localities it is quite hardy in the open. It is no doubt, the most beautiful of all the Viburnums.

The above list does not include all evergreen shrubs that may be successfully grown as wall plants, but it offers a good selection. *F. S. Banfield.*

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THE GARDEN: ITS CRAFT AND ARCHITECTURE.

An author who has given twenty years and upwards to the study of his chosen and favourite subject should be able to render valuable service to the public, and, if the results of such research are presented in a pleasing and accurate manner, they merit careful examination and a hearty welcome. The writer of this work* in two large volumes, fully and beautifully illustrated, clearly printed and carefully edited, informs us that she laid their foundations so long ago as 1904. What is, perhaps, of greater interest to us is the fact, which she records, that her first venture in garden literature was an essay on the Origin of Landscape Gardening in England.

She acknowledges her indebtedness to such works as *A History of Gardening in England*, by Alicia Amherst, and the works of H. I. Triggs, including *Gardens in England and Scotland* (1902) and *Garden Craft in Europe*. The present work is a new edition, the original having appeared in 1913. While the preface to the first edition is dated Heidelberg in the September before the Great War, that now under review has a brief introduction written in Java. Grateful thanks are presented to various friends for seeing it through the press in her absence, and they have done their work exceedingly well. The author states, however, that she has not attempted the almost impossible task of re-writing the volumes or bringing them up to date, since the vast amount of work which has been done of recent years could not be reviewed without entirely altering its structure. The work therefore stands practically as a record of what was known about architectonic garden craft up till the time when the War brought the old era to a close and opened a new one. The publishers, indeed, claim for it the position of a standard work which deals not so much with the knowledge of flowers and fruits, vegetables and herbs and trees, as with the architectonic side of the subject. The evolution of the garden from the standpoint of the architect or builder, rather than from that of the horticulturist, the florist and the lover of plant life, is what it sets forth, and the claim is a perfectly just one.

The field to be covered, even so, was of vast extent, calling for patience, wide knowledge, technical skill and many other qualities most of these the writer possessed. She honestly confesses, however, that for some parts of the work she found herself inadequately equipped; but having among her friends a number of scholars who possessed expert knowledge, she readily availed herself of their services. Vast numbers of works have been consulted, chiefly in the three modern languages of Germany, France and England, while the illustrations have been drawn from every conceivable and available source. They include reproductions from photographs of modern gardens and ancient wall paintings, tapestry, sculpture, china-ware, frescoes, old engravings, drawings, miniatures, mosaics, plans and charts of every description. Our own British Museum has been drawn on for some, while a considerable number has been obtained from the works of English authors. Thus, for ancient Egyptian and Assyrian garden lore such well-known authorities as Rawlinson and Layard, Wilkinson, Newberry and Flinders Petrie have been laid under tribute, while illustrations from Triggs, Hill, Latham and others are used for English gardens, Chambers for China and so forth. These include some fine recent photographs of Chatsworth, Trentham (alas! *Sic transit gloria mundi*), Montacute, Levens, Haddon Hall and others, which will appeal to the continental traveller, of Rome, Florence, Frascati, to mention only a few of the most familiar and noteworthy.

And that our English writers were used with care and intelligence, and not merely for purposes of plunder, is shown by such a comment as that which accompanies the reference to *A History of English Gardening*, by George W. Johnson, to the effect that the value of this work consists in its carefully prepared bibliography relating to English garden literature, and the extracts which have been drawn from these earlier works. This note may be compared with others, including the one on "Gardens Old and New."

Though monastic gardens find a place, we have no reference to Herbals; the valuable old volumes of Gerard, Parkinson and their continental compeers not supplying the kind of facts with which the author is particularly concerned. Old travellers and tale-mongers are also left out in the cold, so that we get none of the quaint conceits of such a writer as Sir John Mandeville, for example.

The author's familiarity with English and French garden literature is shown by the absence of serious errors in the letterpress, and the careful way in which our usages, which often differ so widely from those of the Germans, are respected. To the English eye it is painful to see the titles of books with the capital letters omitted or misplaced, yet it is only on rare occasions that this occurs in the present work. A few slips, however, may be pointed out, such as "italian garden" (ii, 419, twice), where we should write "Italian" with a capital. To us, also, there is a strange look about words such as Kewgarden, Chelseagarden, Kensingtongarden, and Hydepark (ii, 381-2, 411, 416-7), Hertfortshire (ii, 58, 71) and Wimbleton (ii. 73-4), Haddon Hall is thrice given as Hadden (ii. 69, 478), Barrey for Barry (ii, 421), Jadrin (ii, 378) is a slip for Jardin and Capabilty (ii, 374) for Capability. Plant names are not often used, but we find Dielytra (ii, 416) in place of Dielytra, and Fu-tshan in South China should be Fat-shan, the well-known town a few miles from Canton. It was to be expected that, where notes are added at the end of the volume instead of at the foot of the page, or the close of each chapter, a few omissions would occur. These, however, are not serious, though we could have wished that the reference to note 51*b* (i, 45) had been given on page 417, where also there is another omission from the Book of "Chronicles." Such little points may be taken really as a testimony to the accuracy of the work in general.

Nearly all the quotations from and references to English and other languages are rendered into German. We find, however, (ii, 372) seven lines from Pope in their native dress—dare I say like flowers in a desert? Although the chapters are carefully and somewhat freely annotated there is no systematized bibliography, and such a lack in these days is seriously felt by the student. It is true the author feels this also, and somewhat lamely apologises for the fact, but an alphabetical or chronological list of books might, with small trouble, have been compiled from those already listed, and if those which have bibliographies had been indicated (as in the case of Johnson noted above) the value of the work would have been greatly enhanced.

It may also be noted that the index is, as its name implies, much more of a register of names (Namenregister) than a guide to the subject matter, and might have been extended or supplemented with advantage. I was at Compton Wynyates the other day, for example. and paid special attention to the topiary work. But though the subject is treated in this volume no such word as Topiary or Opus topiarium, which is found in the body of the work (ii, 450) occurs in the index, and we have to turn to the name Levens Hall to find our place. Other references to topiary work will be found in Vol. ii, 52, 53, 55, 122. The German term "Verschnit" is not in the index any more than the Latin or English. The work is of such value that I could wish it made as perfect as possible,

This general survey will be followed in due course by a more detailed account, in which I shall endeavour to show the ground covered, and the method of treatment adopted. *Hilderic Friend.*

FLOWERS OF WANING SUMMER.

There is not the slightest difficulty in filling the herbaceous border with flowers that will bloom at any given period between April and the end of July, but it is when August merges into September that a large proportion of such borders have a forlorn and bedraggled appearance, and it is not the easiest thing to guard against such an occurrence.

It would not be a very difficult matter to select subjects with which to fill a border for the express purpose of making a great display of colour during late August and the greater part of September, but unless a garden is large enough to accommodate a series of seasonal borders, each one of which is especially designed and planted to provide a full display during its own particular month, there would be rather serious objections to devoting a whole border to plants which would contribute nothing to the colour display of May, June and July.

The mixed border is the most generally useful, and the problem is to strike just the right proportion and selection of plants which bloom during the waning of summer, but which will not create too much plain green during the earlier months. This latter stipulation will exclude Michaelmas Daisies, Heleniums of the real autumn class, and in fact, it places broad masses of almost all strong-growing, late-flowering plants at a discount, because their use produces precisely those dull, early-summer patches it is desirable to avoid.

The object in view will be best attained by the careful distribution throughout the border of plants which may be depended upon to throw up straight stems of effective flowers without occupying much ground or producing wide, spreading herbage.

Among tall-growing plants for the purpose, there are several which would be defective when grown in broad masses, but which will be admirable when propagated and planted in spring as single-stemmed plants, because they may be dotted amongst groups of Pyrethrums, Aquilegias, Campanulas and various other plants without robbing them of head-room or unduly dominating the picture, whilst the earlier subjects are in their prime.

Silphium perfoliatum is one such plant. By taking cuttings of young growth in Spring, cutting square at a joint when the growth is about the length of one's finger, and rooting them singly in pots of sandy compost, sturdy, single-stemmed plants may be secured for planting out at the end of May. At a yard apart these plants will grow almost unnoticed among such things as Aconitums, tall Campanulas, Chrysanthemum maximum and Lupins, but by the time these have faded and require trimming the Silphiums will stand boldly erect, diverting attention from the less attractive plants between them, and producing an imposing display of flowers which are of a more refined tone of yellow than any one of the Helianthus tribe.

The plants may remain a second year in position provided the number of stems on each specimen is reduced to prevent their undue aggression to the detriment of the associated plants, but it is the spring-struck cuttings which best fulfil the particular purpose we have at present under consideration.

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* Marie Luise Gothein *Geschichte der Gartenkunst*: Eugen Diederichs, Jena, 1926. Vol I., pp. vii + 451, illus. 1-311. Vol. II, pp. 505, illus. 312-637, with notes, index to illustrations and name-register. Price 55 marks.

Dierama pulcherrima or one of its varieties, such as the Donard Nursery Co. have so well shown on various occasions, will produce a charming effect when planted in sparse groups among the plants of earlier season, and Watsonia Ardernei is a real gem for planting among Paeonies, and with a loose, dry mulch of Heather, Gorse or Bracken, in winter, the bulbs will be safe in most well-drained soils. Lobelia Tupa, grown on single crowns will, in midland and northern gardens, maintain uncommonly attractive flowers right through August and well into September, but in the south and warm west country this plant is often at its best in July.

The second flowers of Delphiniums are invaluable, the one condition being that they shall be of the varieties which are not too prone to mildew; some of the Belladonna type are exceptionally good in autumn. Lupins raised from March-sown seeds and grown on without a check will produce many spikes of good bloom during the ebb-tide of summer, and, of course, Gladioli may be had right through the months of August and September by carefully studying their various times of blooming, for they differ in this respect more widely than many appear to realise.

Pentstemons of the large florists' type should be valuable in the hands of the planter for late summer and autumn effects. My garden, high and dry, on a porous, stony soil, fortunately enables me to keep Pentstemons indefinitely, and some six-year-old plants with thick, gnarled, woody bases provide innumerable spikes of bloom right through the summer, but by striking cuttings both in autumn and in spring I am always provided with young plants to dot about the foreground of a border, and these start, fresh and full of vigour, to bloom when August nears its end, continuing a brave display until actually stopped by severe frost. Salvia Greggii is a valuable plant late in the summer with its flowers of shining red, and right in the foreground of the border Ceratostigma plumbaginioides gives a welcome dash of blue. By thinning out the growths at intervals during summer, I find the quantity of flowers is considerably increased, whilst they are brought more into view than when the dense mass of leafy shoots remains untouched.

At intervals along the middle of the border, Artemisia lactiflora waves feathery racemes of cream-coloured blossoms. My plants, at the time of writing have been effective for a month, and they look like continuing for yet another month. This, again, is a plant which produces much better results from small plants than from big clumps. It pays to lift and divide by pulling the crowns asunder every second year. *A. J. Macself.*

ORCHID NOTES AND GLEANINGS.

SOPHRO-LAELIO-CATTLEYA PRUDENCE.

In the report of the Royal Horticultural Society's meeting in *The Gardeners' Chronicle*, July 31, p. 97, the parentage of Lt.-Col. Sir George Holford's hybrid under the above name was given as S.-L. laeta × C. Fabia, the same as in the last list of New Hybrids. The flower was illustrated in *Gard. Chron.*, August 7, p. 109.

The original record was S.-L. Orpetii × C. Fabia. The difference probably arises from the earlier records of L. pumila, including L. Dayana as a variety and S.-L. Orpetii being recorded as S.-L. laeta Orpetii. It is not certain as to whether L. pumila praestans was one of the parents of L. Dayana. In the former case S.-L. Orpetii would be correct, or in the latter S.-L. laeta. It is to be regretted that such a distinct species as L. Dayana, with its pronounced ridges on the lip, and the differently constructed L. pumila, should be confused, but the accepted original record must be maintained, however.

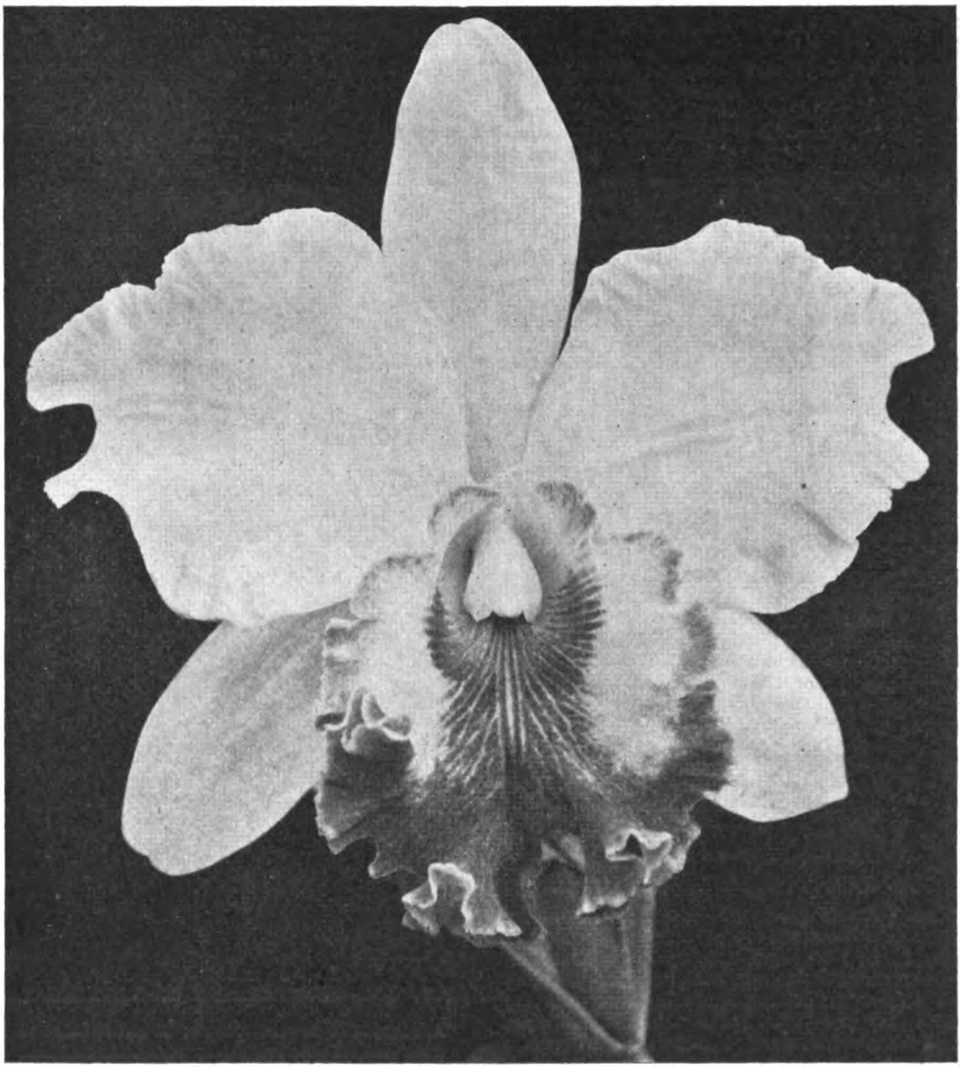


FIG. 103.—POTINARA LA PAZ.

R.H.S. First-Class Certificate, August 24. Sepals and petals butter-yellow, lip purple, with lighter lines running inwards. Shown by Baron Schröder (Gr. Mr. J. E. Shill).

LAELIO-CATTLEYA NAVAJO, LOW'S VARIETY.

A noble example of this fine cross between C. Ballantineana and L.-C. callistoglossa is sent by Messrs. Stuart Low and Co., Bush Hill Park, Enfield, and Jarvisbrook, Sussex. The plant bears a bouquet-like inflorescence of four large and finely-formed flowers. The sepals and petals are silver-white with a mauve shade and slight rose veining on the petals. The broad front of the tube of the lip is white with chrome-yellow disc.

In the hybrid, the rather narrow sepals of L.-C. callistoglossa are expanded, and the whole flower improved, the C. Warscewiczii parent in C. Ballantineana being well displayed in the colour of the lip. The hybrid was once before recorded from the United States of America, but Messrs. Low's plant is the first to flower in this country.

CATTLEYA IRIS.

Cattleya Iris is a hybrid raised by Messrs. Charlesworth and Co. between species belonging to two quite different sections of the Cattleya family, and it is a striking illustration of the unexpected that often happens when crossing widely different parents.

One of the parents, Cattleya bicolor, is by no means a showy species, but the result of crossing it with C. Dowiana, of the labiata group, is most satisfactory, and has been the means of obtaining a group of autumn-flowering Cattleyas which produce bold spikes of bloom of the most beautiful golden and bronze hues.

In 1901, when C. Iris was introduced, it was considered to be one of the greatest improvements made up to that time, especially the best forms of it. The usual variation of colour occurring in a batch of seedlings, even of of a primary cross, revealed itself, some of the progeny having flowers of a most beautiful golden yellow, whilst others were of old gold or a golden-bronze hue, and some had a lip like one parent, and some a lip like the other. Many choice varieties of C. Iris have received awards under varietal names.

But fine as C. Iris is in itself, it has been eclipsed in some instances by its progeny amongst the fifty or so crosses made with other species and hybrids, and it is to this particular set that I wish to refer.

In the first generation C. bicolor, a plant with greenish sepals and petals, and with some bright colour on its lip, crossed with the rich yellow flower of C. Dowiana aurea, gave us C. Iris in all its forms. In the next generation, C. Iris crossed again with C. Dowiana aurea gave us the lovely C. Venus, which in its best forms is as yet unsurpassed in this section of Cattleyas. In the third generation, C. Venus crossed with Laelio-Cattleya luminosa aurea gave us L.-C. Mrs. Medo, a form that promises to out-rival its parents, both in size and shape, whilst the beautiful colour of C. Dowiana aurea is still maintained.

It is impossible in a short note to discuss the whole of the crosses made with C. Iris, even if they were worthy of it, but the names of a few of the best known will suggest the wealth of beauty in these most useful Orchids at this season of the year. C. Rhoda, which was obtained by Messrs. Charlesworth and Co. in 1908, from C. Iris crossed with C. Hardyana, has C. aurea twice in its parentage, C. aurea being one of the parents of C. Hardyana. In this case it might be imagined that yellow would be the predominant colour, but it is not so, for the largest numbers are of other beautiful tones. C. Venus crossed again with C. Dowiana gave us the beautiful yellow C. Aeneas. Both C. Venus and C. Rhoda have been used as one parent in ten cases, but in some instances highly-coloured species and hybrids have been employed. C. Venus has also been crossed with members of the Brasso-Cattleya group with most satisfactory results.

Before the days of Cattleya hybrids, Orchid flowers were scarce in August, September and October, especially before the re-discovery of C. labiata, but at the present time it is possible to enjoy and maintain a continual autumnal display of these most beautiful and gorgeous Orchids. *J. T. B.*

CATASETUM MACROCARPUM.

A fine inflorescence of this interesting species is sent by J. McCartney, Esq., Hey House, Tonge Moor Road, Bolton. The species is widely distributed in tropical America, and the flowers vary considerably in different localities. The variety sent is of the showiest form, best known in our gardens from the quantity of specimens imported some years ago from Venezuela with varieties of Catasetum splendens. The latter is a natural hybrid between C. macrocarpum and C. pileatum (Bungerothii), the showy and richly coloured forms of which were great favourites in gardens.

In the specimen of C. macrocarpum sent by Mr. McCartney, the large, fleshy, yellowish labellums are uppermost, and the whitish sepals and petals have dotted and flaked lines of scarlet colour arranged around. There are some bright crimson spots at the bases of the labellums which serve to attract insect visitors alighting on the margin of the opening leading to the trap-like arrangement retaining the pollen masses. *J. O'B.*

MESEMBRYANTHEMUM.

(*Continued from p.* 149).

XI.—PUNCTILLARIA, N. E. Br.

Very dwarf, succulent perennials, without internodes between the leaf-pairs. Leaves opposite, in 1–2 pairs or, under cultivation, sometimes 3 pairs to a growth or plant, those of each pair equal in size, spreading, very shortly united at the base except in P. Roodiae, usually three or more times (in one species usually less than twice) as long as broad, thick and fleshy, firm, usually very conspicuously dotted. Flowers solitary and terminal between the leaves, sessile or shortly pedicillate, bracteate. Calyx 5–6-lobed, sometimes produced above its union with the ovary into a short tube or cup. Petals numerous, free, linear. Stamens numerous, erect, and when the calyx has a tube above the ovary, arising from the top of that tube with the petals; staminodes none. Stigmas 9–15, filiform; no style. Ovary inferior, 9–15-celled; placentas down the centre of the outer wall of the cells and often extending part of the way up the central axis. Capsule (Fig. 104) subhemispheric, with 9–15 valves and cells; each valve with a pair of separated, parallel, expanding keels often ending in awn-like or membranous points and with membranous wings at the sides; cells acutely roofed with rather rigid cell-wings or separated elements of the cell-partitions with their outer ends turned back so as to form a somewhat trumpet-shaped opening to the cell, which is partly or nearly closed by a small or large tubercle (cell-wings flat and membranous and the tubercle rudimentary in P. Roodiae); the ridges formed by the roofs of the cells together with their turned-back ends form a series of small cavities alternating with the cells, the whole being raised in a sort of crown above the level of the expanding-keels. Seeds somewhat compressed-ovoid and slightly angular from mutual pressure, with a nipple at one end.

Species 5, natives of the Karoo region of South Africa, the type of the genus being P. magnipunctata N. E. Br.

The name is derived from the Latin, *punctillum*, a dot, in allusion to the conspicuously dotted leaves.

This genus is closely related to Pleiospilos and, except in vegetative characters, is technically only to be distinguished from that genus by the opening to the cells of the capsule being nearly closed by a large tubercle. But this tubercle is doubtless of some functional importance to the plants having it, and as it is combined with a different type of foliage, I consider it to be quite as important a generic character as, for instance, the presence or absence of scales upon the claws of petals or at the mouth of the tube of a corolla are held to be. The function of these tubercles is very obscure; they occur in several distinct genera, and so far as I have been able to discover, they prevent, rather than aid, the dispersal of the seeds. They offer a problem that requires investigation, for Nature would scarcely develop such pronounced structures as these tubercles are unless they were to be of some importance to the plant. As I have previously stated, the fruits of these plants are the most complicated in the world of flowering plants and the most puzzling to understand.

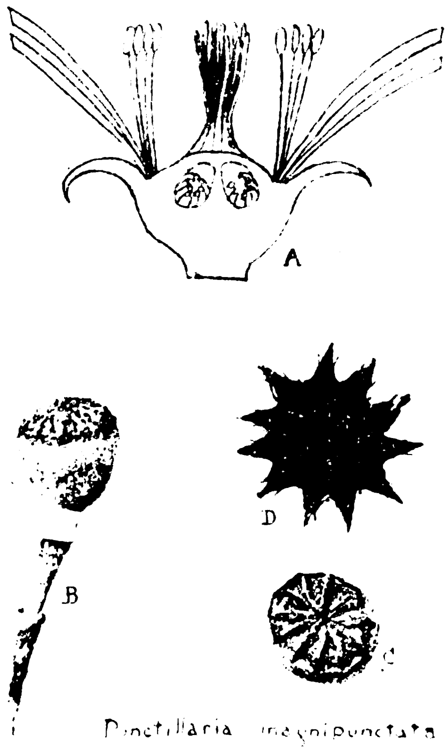


FIG. 104.—PUNCTILLARIA MAGNIPUNCTATA.

A. Diagram of flower-structure; B. and C. Side and front views of closed capsules; D. Capsule expanded after wetting; B.—D. Natural size.

KEY TO THE SPECIES.

1.—Leaves less (or not more) than twice as long as broad, 1–2¼ inches long, 8–14 lines broad, flat on the face, very obtuse, flowers two inches in diameter, sessile.
5. Roodiae

Leaves three to four (or more) times as long as broad. 2

2.—Leaves 6½–11 lines broad or perhaps sometimes broader, 1½–3 inches long, flat or faintly concave above, very conspicuously marked with large dots on a glaucous-green or brownish-tinted ground; flowers sessile, 2–2½ inches in diameter.
1. magnipunctata

Leaves 3½–7 lines broad, if very conspicuously dotted then not glaucous-green. 3

3.—Leaves mostly 2½–3¼ inches long, distinctly recurved at the upper part, tapering at the apical part to an acute point, distinctly concave on the face.
3. compacta

Leaves 1¼–2½ inches long, not or but slightly recurved and not tapering to an acute point, flat or but slightly concave on the face. 4

4. Leaves with conspicuous and slightly prominent dots; flowers 2–2¼ inches in diameter on peduncles about ¾-inch long.
2. sororia

Leaves with small and not very conspicuous dots that are not prominent; flowers 1¼–1½-inch in diameter, sessile.
4. optata.

1. P. magnipunctata, N. E. Br. (Fig. 105).—Plant forming clumps 3–4 inches high. Leaves normally in 1–2 pairs to a growth, very stout, ascending-spreading, united for 4–6 lines at the base, varying in size on different plants, 1½–3 inches long, 6½–11 lines broad at the base, enlarging to 9–13 lines broad a little above the middle, 5–9 lines thick at the base enlarging to 9-11 lines thick near the apex, flat or faintly convex or concave on the face and straight or very slightly recurved, with blunt edges, convex on the back at the base, bluntly keeled and trigonous with convex faces or triquetrous with concave faces at the apical part, obtuse at the apex in front and side views, surface glabrous, slightly harsh to the touch, variably light green, greyish green or more or less tinted with brownish, varying from slightly to very glaucous, everywhere covered with large dark green or blackish dots, which are slightly prominent on some plants and not so on others. Flowers solitary, terminal, quite sessile, bibracteate. Calyx unequally 6–7-lobed; lobes 4–7 lines long, ovate, acute or obtuse, some with membranous margins. Corolla 2–2¼ inches in diameter, opening in the afternoon and closing about 6 p.m.; petals numerous, in about 4 series, 7–12 lines long, ½–¾-line broad, linear, obtuse and more or less bluntly toothed at the apex, bright yellow. Stamens erectly spreading, at first forming a somewhat funnel-shaped mass, becoming more spreading and looser, 3½–4 lines long; filaments and anthers orange-yellow. Stigmas 9–12, finally about as long as the stamens and four lines long, filiform, subplumose on the inner side, orange-yellow, suberect, seated on the conical top of the ovary, which is 9–12 celled. Capsule, when closed, 6–7 lines in diameter, somewhat hemispherical, flattened at the top, grey, dotted; when expanded about an inch in diameter, mostly with 10–12 valves and cells, sometimes fewer; structure as described for the genus, the expanding-keels being awn-pointed; the whole of the interior is in effect of a dull dark brown, the cells being rather brighter than the rest and somewhat orange-brown, and the expanding-keels blackish. Seeds not numerous in each cell, about ¾-line long, compressed-ovoid, pointed at one end, minutely tuberculate, brown.

Mesembryanthemum Magnipunctatum, Haw., *Suppl. Pl. Succ.*, p. 87 (1819), and *Rev. Pl. Succ.*, p. 86; Sonder in *Fl. Cap.* vol. II, p. 396; Berger, *Mesemb.*, p. 264; *Zeitschr, f. Sukkul.*, vol. II., p. 160.

Laingsburg Division: Near Matjesfontein, Pillans! Austin! Frith! Originally discovered in this region by Bowie, who, according to a note on the drawing of the type plant at Kew, "found it growing on the heights near Sea-Koe River." I do not find this river marked on modern maps. The note further states that "The small variety (B. duplo-minus p. 88) mentioned by Haworth in his

Supplementum, proved afterwards to be precisely the same with Burchell's plant." Prince Albert Division: Near Abraham's Kraal, Mrs. D. van der Bijl!

Fig. 105 is from a photograph taken in South Africa by Mr. T. N. Leslie, and correctly represents the plant described by Haworth as M. magnipunctatum, according to a fine coloured drawing of the type preserved at Kew. There are, however, other plants in cultivation with narrower and more pointed leaves that pass under this name, which I have not had an opportunity of comparing with this (the true M. magnipunctatum, Haw.), when in flower, to note if any difference of a specific nature can be found in their flowers.

I am informed by Mrs. van der Bijl that this plant is eaten by tortoises and is known as "Tortoise-food" or "schildpad kost," of the Dutch farmers. Dr. Muir also informs me that various species of Glottiphyllum and some other genera are eaten by Tortoises and known by the same name.

2. P. sororia, N. E. Br.—Plant forming clumps 2–4 inches high with short, branching stems 3–4 lines thick. Leaves 4–6 to a growth under cultivation, probably only 2–4 under natural conditions, ascending or the outer spreading, very stout, 1½–2½ inches long, 5–7 lines broad, 4–6 lines thick at the base and 4½–6½ lines thick near the apex, straight or occasionally slightly incurved and often curved to one side, flat or slightly convex on the upper side, rounded on the back at the base and obtusely keeled at the upper part, viewed from above with nearly parallel sides or slightly widened upwards to the middle or for three-fourths of their length then tapering to a bluntly pointed apex, and in side view usually slightly thicker near the apex than at the base, glabrous, dull green, densely and conspicuously marked with dark green, slightly prominent dots all over. Peduncle 1-flowered, 9 lines long, 2–2½ lines thick at the base, thickening upwards, terete, with two bracts 3–9 lines long at its very base, light green, sprinkled with some slightly darker green dots. Calyx 6-lobed; lobes subequal, 5–6 lines long and 2½–3 lines broad, ovate, acute or obtuse, with a short dorsal point near the apex, some of them with membranous margins, green or purplish-tinted, dotted with darker green. Corolla 2–2¼ inches in diameter, opening late in the afternoon; petals more than 100, in 4–5 series, the outer about 1–1¼ inch long, the inner shorter, ½–¾-line broad, linear, acute or obtuse or some of them notched at the apex, of a rich yellow and slightly shining on the inner face, whitish and tinted with rose on the back. Stamens very numerous, at first erect, becoming erectly-spreading, somewhat in a circle, so as to leave a central space in which the base of the stigmas can be seen; filaments yellow above, whitish at the base; anthers deep yellow. Style none; stigmas 10–14, arising from the stout conical grooved top of the ovary, 5 lines long, filiform, much longer than the stamens, radiately spreading at the base, then erect, shortly plumose on the inner side, greenish-yellow, paler than the anthers.

Mesembryanthemum sororium, N. E. Br., in *Journ. Linn. Soc. Bot.*, vol. XLV, p. 72 (1920).

South Africa: locality and collector unknown. Described from a living plant sent to me by Dr. F. H. Rodier Heath, who received it from a friend in South Africa and believed that it was collected in the Karoo region, possibly in Ceres Division.

This species is allied to D. magnipunctata, but differs from that species by its smaller leaves, which are marked with smaller and less conspicuous dots, and by its distinct peduncle, the flowers of P. magnipunctata being sessile. From P. optata it differs by its larger leaves, which are more distinctly triangular in transverse section, and by the larger and distinctly pedunculate flowers.

The above is copied from my original description, and comprises all that I know about this species. *N. E. Brown.*

(*To be continued.*)

MARKET FRUIT GARDEN.

HAD it not been for the deluge of rain on the 16th, August would have been a dry month. On that date 1.65 inch of rain fell in a very short time, accounting for a large share of the month's total of 2.73 inches. I did not see this rain, as it fell during the night; but it must have been exceptionally heavy, for I have never known such serious washing away of soil and road material. In some of my hilly plantations tons of soil were washed down to the bottom, and deep gullies were formed on the slopes. Apart from this, no damage was done by the storm, and the land soon dried under the influence of the frequent sunshine. On the whole, it was a very favourable month for the fruit grower. Crops ripened gradually, and the weather caused hardly any interruption to picking.

NO GLUT OF PLUMS.

There was never any glut of Plums in the markets which I supply. Early varieties were quite scarce and made good prices once the supply of French Plums and Spanish Greengages came to an end. The demand for Czar and Belle de Louvain was very brisk indeed. Even when it came to Victoria, which was the crop of the season, prices did not fall so low as was expected. I sold very few Victorias at less than 8s. per half-bushel for first-grade fruits, and "seconds" remained at 6s. throughout. Large, selected fruits in chip baskets of seven pounds sold at the rate of 10s. to 12s. per half-bushel. These are hardly glut prices. Undoubtedly they were secured only because the Plums were graded carefully, all split and damaged fruit thrown out, and the full 28 lb. net weight given in each basket. I have found before that, if these matters receive attention, there is little to be feared from gluts of Plums. I must admit, however, that I have the advantage of being in a rather early district, and can often take the cream off the market before supplies become too plentiful; and by the time the public begin to get tired of one variety I am ready with the next. It was fortunate that Plums ripened so gradually. In some seasons varieties follow one another so closely that it is a wild rush from beginning to end, and the markets do become over-supplied. The only drawback was the amount of splitting, followed by rotting, in some varieties. Belle de Louvain was the worst offender, about 25 per cent. of the fruit being unfit for sale. Victoria, on the other hand, was quite sound, as it always is. There is no better market Plum than this. It is probably the most regular in cropping, with the possible exception of Czar, it is suitable for all purposes, and it keeps well after picking. At one time it was generally a cheap variety; but I doubt if it will ever be so cheap again, as the danger of silver-leaf has discouraged growers from planting it in recent years. I have still to pick a good crop of Monarch, and light crops of Pond's Seedling and President.

APPLES SCARCE.

There can be no doubt about the scarcity of Apples. I think it is the lightest crop I have ever experienced. Dessert varieties are particularly short. Of Beauty of Bath I had only 49 half-bushels, as compared with 1,243 last year. Of Cox's Orange Pippin I had 940 half-bushels last year and 1,224 in 1922. This season there will not be one. Worcester Pearmain is really the only English dessert Apple this year; so it is not surprising that it is selling well. The first-grade fruits have been realising 11s. per half-bushel, and even the third-grade, 6s. Nothing, however, in the way of prices can compensate for the lack of bulk in such a season.

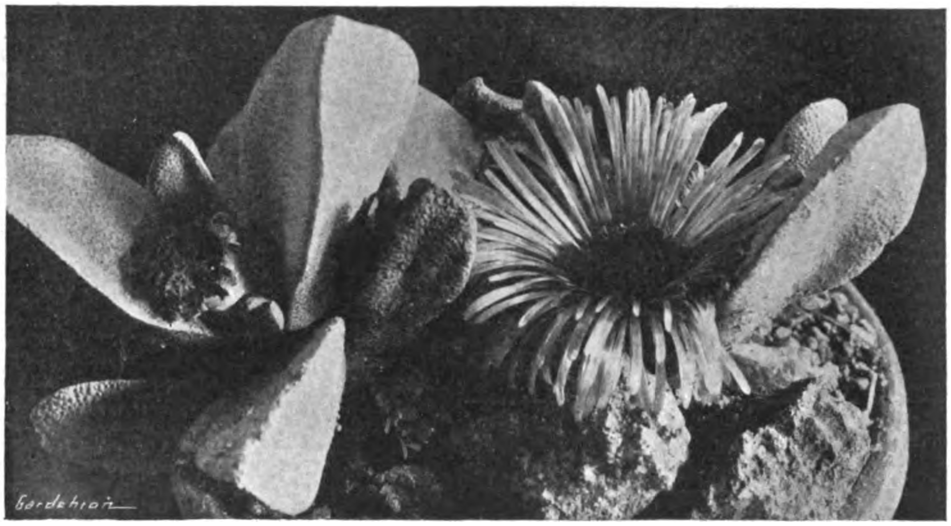


FIG. 105.—PUNCTILLARIA MAGNIPUNCTATA.

⅚ Natural size.

INFLUENCE OF SUMMER RAINFALL.

Several times in these notes I have mentioned the alternate-year-bearing habit of Apples as being a potent factor in determining the yield in any given season, and particularly as being more often responsible for crop failures than the spring frosts which so commonly receive the blame. The exceptions which occur now and then have, however, always puzzled me. I think I have found the solution of this problem in a very interesting article on the influence of summer rainfall and previous crop on the fruiting of Apples, contributed by Mr. A. H. Lees, of the Long Ashton Research Station, to the July issue of the *Journal of Pomology*. After examining certain records of rainfall and yield for many years back, the author has formed the opinion that the crop depends far more on the internal condition of the tree than on external conditions at the time of blooming, and that the former is influenced chiefly by the amount of the previous crop and the rainfall of June, July, and August in the preceding year. These two factors, the crop and the rainfall, act in conjunction in determining the amount and position of the organic food reserves within the tree. The importance of the amount of summer rainfall, Mr. Lees considers, lies in the fact that this decides the date at which extension shoot growth ceases and the storage of organic food material begins. When the summer rainfall is low, shoot growth ceases early and there is plenty of time during the autumn for the storage of food reserves close to the fruit spurs; and the bloom in the following spring is likely to be ample, strong and capable of setting even in conditions that are not too favourable. On the other hand, when the summer rainfall is high, shoot growth continues late in the season, much of the food material is used up instead of being stored as already explained. Consequently the bloom in the spring is likely to be scarce, or at any rate weak, so that it does not set well. The amount of the hanging crop has its influence, as may also the pruning and manurial treatment, and uncontrolled attacks of pests and diseases may obviously upset matters.

SCHEME FOR CROP ESTIMATION.

As a result of his investigation, Mr. Lees suggests the following scheme for Apple crop estimation :—

CROP.	RAINFALL.	SUCCEEDING CROP.
Heavy	Wet	Very poor
„	Medium ...	Poor
„	Dry	Medium
Medium ...	Wet	Poor
„	Medium ...	Medium
„	Dry	Good
Light	Wet	Medium
„	Medium ...	Good
„	Dry	Very good
None	Wet	Good
„	Medium ...	Very good
„	Dry	Very good

With regard to the rainfall, the summer is to be considered dry if the total rainfall of June, July and August is less than six inches, medium if it is from six to nine inches, and wet if it exceeds nine inches.

THE SCHEME APPLIED.

I have applied the scheme, using my own rainfall and crop records for the past eight years, with the following result :—

Year.	Previous Crop.	Previous Summer Rainfall.	Actual Crop.	Estimated Crop.
1919	Poor	M. 6.17	Good	Good
1920	Good	D. 5.12	Poor	Medium
1921	Poor	M. 8.00	Good	Good
1922	Good	D. 1.57	Good	Medium
1923	Good	M. 8.24	Poor	Poor
1924	Poor	M. 6.49	Poor	Good
1925	Poor	W. 9.24	Good	Medium
1926	Good	M. 6.60	Poor	Poor

The letters D. M. and W. in column III stand for dry, medium and wet.

It will be seen that the estimate agrees perfectly with the actual crop in four out of the eight years, whilst in two others the crop was good when it should have been medium, which is not a thing I am inclined to complain about. The only serious disagreement between the actual and estimated crops was in 1924, when I should have had a good crop but had only a poor one. This, however, is easily explained by the fact that the trees were very much weakened by the severe aphis attack of the previous year (1923). Mr. Lees shows that a bad aphis infestation greatly reduces the next crop. Altogether, I consider that the method works out very well for the series of years to which I have applied it. It is worth noting that alternate-year-bearing was upset twice in the eight years. The heavy crop of 1921 was followed by another good yield in 1922, this being due to the very low rainfall of the summer of the former year. In 1923 and 1924 there were two poor crops in succession, this being caused by the severe aphis attack of the former season, as already mentioned. It is pleasant to think that the present season's very poor crop, combined with the medium amount of summer rainfall which we have had in the south, should give us promise of a good crop of Apples next year. *Market Grower.*

REMARKS ON THE CONDITION OF THE FRUIT CROPS.

(See Tables and Summaries, Ante, pp. 111-117.)

(*Continued from p.* 193.)

MIDLAND COUNTIES.

DERBYSHIRE.—Fruits trees generally promised full crops at blossom time, but late frosts and swarms of aphis, especially on Currants and Plums, ruined the prospects. Our soil is mainly gravelly loam on marl or clay, and occasionally on gravel. *C. A. Corke, Oak Cottage Gardens, Sudbury.*

HERTFORDSHIRE.—The fruit crops are not up to the average in quantity owing to the wind being in the east for days when the blossom was expanded, and we had 8° of frost for four nights in succession. Small fruits have been satisfactory except Strawberries. Black Currant Blacksmith yielded a fine crop. Fruit trees have been free from aphis and made fine growth for another season. The soil is a cold, hard clay. *Richard Staward, Ware Park Gardens, Ware.*

——Apples are a failure. Late frosts and cold north-east winds prevailed while the trees were in bloom and did considerable damage. Pears and Plum trees in sheltered positions are bearing good crops. The trees are fairly clean of aphis and making good growth. The Apples are suffering from attacks of aphis and caterpillars and spraying has been resorted to to check these pests. Our soil is heavy clay. *W. Stephenson, Hyde Hall Gardens, Sawbridgeworth.*

——In the early part of the season the prospect of good crops of fruits of all kinds looked bright, for all trees were a mass of blossom. The weather conditions during May were disastrous, especially to the Apples and Plum crops, for the fruits which had apparently set all dropped off, leaving most of the Apple trees without any fruit on them. I attribute the failure to the wet and sunless weather during that time more than to frost and other causes. Peaches are an average crop but later in ripening than usual. Strawberries were satisfactory in every respect. Of bush fruits, Red Currants were poor, Black Currants a failure, Gooseberries abundant and Raspberries small and unsatisfactory. The soil is loam on clay, and in some parts gravelly. *George H. Hill, Caldecote Gardens, Bushey Heath, near Watford.*

——On the whole, the fruit crops here and in this district are disappointing. Apples are practically a failure, our best-cropped varieties being Lord Derby, Hambleden's Deux Ans and Small's Admirable. Our trees bore very heavily last year; nevertheless many flowered very well, but the fruits failed to set. Pears and Plums on walls promise very well, and Cherries, both dessert and cooking, were quite up to the average. Most bush fruits carried good crops, but Black Currants have been very badly infested with black aphis. The Strawberry crop was quite the worst I have ever known; the majority of the plants failed to make any growth, and the early flowers were destroyed by frost. Our soil is stiff London clay, and we generally suffer from late spring frosts. *Edwin Beckett, Aldenham House Gardens, Elstree.*

——Recently planted Apple and Pear trees are all bearing full crops, and in both cases the fruits have been drastically thinned owing to the blossom setting so freely. Orchard trees that are producing good crops are Bramley's Seedling, Beauty of Kent and Bismarck, while other varieties are a thin crop. Scab has been troublesome, and owing to the wet weather early in the season spraying was delayed. Plums are above the average in quantity; even on standard Plum trees the fruits required to be severely thinned or the crop would have been useless. Cherries, both sweet and Morello, were thin crops, and aphis was very troublesome. Peaches are a fair crop and the quality good, but Apricot trees are practically barren of fruit. Small fruits were quite good. Strawberries were satisfactory in spite of late frosts, two outstanding varieties being Royal Sovereign and King George. Damsons on some trees are a heavy crop, King of the Damsons being the most prolific. *T. Pateman, Brocket Hall Gardens, Hatfield.*

——Successive low night temperatures and want of sun in late spring are in part responsible for a wholesale shedding of the fruits, which at one time promised to be very plentiful. The continued wet weather in June favoured the spread of fungous and insect pests, and many garden crops have been affected by insects. Red Currants and Cherries dropped badly, and Apples are scarce, even on trees the crops of which are usually thinned. With July sun the Strawberry crop improved, and there is a more promising crop of Plums than we have had for some years. The soil is of a heavy texture with varying subsoils of chalk and even sand. *A. H. Hartless, King's Walden Bury Gardens, Hitchin.*

LEICESTERSHIRE.—The fruit crops are disappointing after showing such good promise in the spring. for there was an abundance of bloom on all kinds of fruit trees, but late frosts spoilt the Raspberry, Strawberry and Apple crops particularly. Some Apple trees and Plums have fair crops. Peaches and bush fruits set very freely, but the early trusses of Raspberry bloom were spoilt by frosts and cold weather generally. The soil is heavy to light in texture. *W. Coe, Prestwold Gardens, Loughborough.*

NORTHAMPTONSHIRE.—There were prospects of good fruit crops this year, the blossom looking very promising, but persistent cold winds and frost spoilt our hopes. Aphis has been very troublesome. *Alfred Child, Catesby House Gardens, near Daventry.*

——With the exception of Black Currants (which were badly attacked by aphis) all bush fruits were very satisfactory. Raspberries were a very heavy crop and of good quality. Early Strawberries were destroyed by frost, but there was an average crop of maincrop and late varieties. Plums and Damsons are very plentiful. Pears are an average crop and promise to be of good quality. Apples are almost a failure; the trees blossomed abundantly, but owing to severe frosts the fruits failed to set. *F. W. Gallop, Lilford Gardens, Barnwell, Peterborough.*

——Plum and Damson trees were full of blossom and looked very promising until frost occurred during the setting period and practically spoiled the crop. Some of the early flowers of Strawberries were ruined by frost. Gooseberries cropped heavily and the fruits were of fine quality. Raspberries were a good average crop. Our soil is a medium loam over limestone rubble with clay under the latter. *A. R. Searle, Castle Ashby Gardens, Northampton.*

OXFORDSHIRE.—The fruit crops in this district are under average, due to late spring frosts and wet, sunless weather during the blossoming period. Apples are patchy; a few varieties have full crops but the majority are very thin. Pears are a full crop and promise well. Plums on walls are fair, but in the open a failure. The trees bloomed profusely, but sharp frosts and cold, wet weather during the time of setting ruined the crop. Peaches and Apricots are an average yield. Small bush fruits, with the exception of Black Currants, were equal to the average. Many of the earlier Strawberries were spoilt through the damp, sunless weather, but with sunny weather later the late fruits were better. Aphis and caterpillar are very persistent and difficult to keep under. *Ben Campbell, Cornbury Park Gardens, Charlbury.*

(*To be continued.*)

FRUIT REGISTER.

THE HIMALAYA BERRY.

This vigorous Blackberry was introduced in 1892, or thereabout, by Luther Burbank, as a product of a seed sent him "from high up on the Himalaya mountains," as Rubus sp. Himalaya. A few years later the name was changed to the Himalaya Berry or Giant Himalaya.

When the plant came under my notice, I at once recognised it as identical with the German variety Theodor Reimers, which I had cultivated for some years, and as this was introduced into Germany in 1889, it seemed likely that it had journeyed to America to suffer a new baptism.

Enquiries made in botanical circles failed to suggest an Indian origin and its resemblance to our European Rubus pubescens strengthened the belief that the origin would be found very much nearer home. Dr. Hedrick's recent work on the *Small Fruits of New York* now discloses that the correct name is Rubus procerus, or the R. hedycarpus var. procerus, of Focke. This variety is said by Dr. Hedrick to be found "in France and along the Rhine," but it has a much wider distribution. In *Rubi Europae*, by H. Sudre, it is stated to be found in Switzerland, Austria and Transcaucasia, and he names six sub-species (or varieties) of which robustus would seem to be the "Himalaya" Berry.

It is probably now too late to revert to the original Latin name, but this sad chapter of re-naming may suggest that varieties of Rubi, when introduced, should bear their original Latin names rather than the chance names of their introducers. What is correct in the case of flowers should also apply to fruits, even though edible.

As to the qualities of this fruit, a longer experience shows that it is remarkable chiefly for its exceptional vigour and fruitfulness. The flavour is poor or lacking, and it can only be termed a cooking variety. *E. A. Bunyard.*

PUBLIC PARKS AND GARDENS.

Dundee Corporation has decided to purchase, at a cost of £2,075, twelve and three-quarter acres of land bordering Arbroath Road, Broughty Ferry, for a recreation ground.

The Ministry of Health has held an enquiry into an application by Wallasey Corporation for sanction to borrow £9,400 for the purchase of the Cliff Estate, New Brighton, for pleasure gardens.

Warmley Rural District Council has appointed a Committee to consider the question of providing a recreation ground in each parish of the rural area.

Amble Urban District Council is considering a proposal to utilise a portion of the links for a recreation ground.

The Improvements Committee recommends Leeds Town Council to purchase about fifteen acres of land in the Dewsbury Road district for a recreation ground.

One of the prettiest of the open spaces at Liverpool is Calderstones Park, but, unfortunately it is some distance from the centre of the City. At the present time one of the most delightful features of this park is the Old English Garden, where such old-fashioned plants as Hollyhocks, Heliotropes, Mallows, Dahlias, Fuchsias, Southernwood, Lavender Cotton, Lavender, Sunflowers, Phloxes and Roses are grouped in a delightfully simple manner in beds of various sizes surrounding a central pool of Water Lilies. Near by is the Rose Garden, where the pillar Roses are particularly beautiful and Hiawatha especially conspicuous. We noticed also, in front of one of the greenhouses, a long border filled entirely with robust plants of Crinum Powellii album, by far the finest group of this beautiful Amaryllid we have ever seen.

THE CONTROL OF WASPS.

There are many unpleasant effects which are annually experienced as a result of the activities of the common wasp. Various methods have been suggested in the past for gassing wasps' nests, and a method which has been extensively carried out this year under various conditions is worthy of note.

Gardeners are familiar with the results obtained by the use of cyanogas (calcium cyanide) under glass, and the following simple method for the destruction of wasps' nests may be of interest.

Having once located the nest and its entrance, apply into this entrance a dessert-spoonful of calcium cyanide in a spoon tied to a six-foot cane. The material may be introduced at mid-day, when it will be observed that the wasps coming to and from the nest hover at the entrance and then succumb to the deadly fumes which are given off by the cyanogas. The writer has seen on more than one occasion, after having treated a nest in this way, a heap of wasps at the end of the day numbering many hundreds.

Perhaps a more effective method of making sure of killing all the occupants when they are at home would be to fumigate just before dusk. In this case no dead heap will be seen at the entrance. Twenty-four hours after gassing the nest it should be dug out, soaked in paraffin and then burnt; this will ensure the destruction of any grubs which may be in the cells where the gas is unable to penetrate.

The accompanying photograph (Fig. 106) is one of a nest treated in this way and dug out twenty-four hours later. The method is simple and economical and undoubtedly the most effective I know. *Theodore Parker.*

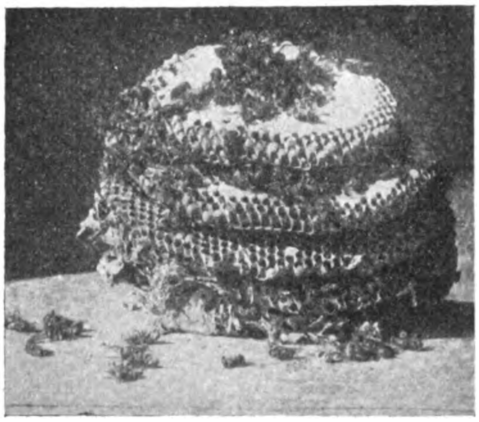


FIG. 106.—WASPS' NEST WITH WASPS DESTROYED BY CYANOGAS.

VEGETABLE GARDEN.

CABBAGES.

The best soil for Cabbages is one of a good holding nature, containing sufficient lime for the promotion of healthy growth. The degree of richness will depend upon the kind of Cabbages grown; those to withstand the winter are all the better for the soil not being too rich, and firmness of soil is an additional advantage. A good method is to plant on ground from which such crops as Onions, Peas or Beans have just been cleared; provided the tillage and manuring for these crops were done thoroughly no further preparation should be necessary beyond cleaning the surface soil.

The distance apart to plant will depend on the variety chosen, and the method adopted with regard to interplanting. A distance of twelve inches apart each way for the smaller sorts and about eighteen inches to twenty inches for the larger, is suitable. A good average distance is fifteen inches apart each way. A method frequently adopted when plants are plentiful is to plant thickly with a view to cutting out the alternate rows and every other plant in the rows early in the season for use as spring greens.

Very little attention will be necessary once the planting is done, beyond the frequent use of the hoe on all favourable occasions and at all seasons. When the plants are well established, a little soil may be drawn up to the stems to prevent them being swayed to and fro by the wind and thus becoming loosened at the roots.

Surface caterpillars are sometimes a nuisance just after planting. Where a Cabbage has been eaten by these pests a search should be made for the grub which should be destroyed before it journeys to the next plant, as a few grubs will cause a lot of damage.

Periodical light dustings with soot should prove beneficial, but no attempt at heavy feeding should be made until March, when a little sulphate of ammonia or nitrate of soda may be given, if necessary, to promote rapid growth.

Should this crop prove a partial or total failure, a sowing may be made under glass early in the new year, transplanting the seedlings when they are large enough, and hardened thoroughly in the open towards the end of March. These will be ready to cut a little later than those from the August sowing.

If the heads are not cut too low down the stem a useful crop of sprouts may be obtained later in the season. The demand for Cabbages during late summer is not very great in private establishments, when this crop naturally takes second place to such vegetables as Peas and Beans but so soon as the supplies of these are diminishing the demand for Cabbages increases.

To ensure a supply of Cabbages for this late period and so far into the winter as possible, seeds should be sown at intervals from March to May. April sowing is most generally adopted and by a judicious selection of suitable varieties sown on the same day, it is possible to have a continuous supply from the end of July to well after Christmas. By making a sowing of the variety Winningstadt during the last week of May, this variety may be had in some localities in good condition until early March. The soil for summer Cabbages should be of a richer nature than that advised for spring supplies, as they make their growth during the hottest part of the year, and in most cases reach maturity before the worst of the winter arrives. The seeds should be sown out-of-doors in a seed bed, and the seedlings transplanted as they become large enough, during June and July, or as ground becomes available. Here, again, the distance apart depends upon the variety, but, on the whole, a larger type of Cabbage is used for this purpose, and a space of eighteen inches to twenty-four inches apart each way is suitable.

The roots of the plants should be dipped in a thick puddle before they are planted, and given a liberal soaking of water immediately after they are set. If the weather is very dry, another copious watering will be necessary a week or ten days later, and when the plants are established frequent hoeings and a constant watch for insect pests is usually the only further attention required.

Seeds of Red Cabbage, intended for pickling, may be sown in March and the plants treated as summer Cabbage, although many prefer to sow in August and grow the plants through the winter, but this means they occupy the ground over a longer period than those sown in March. Dwarf Blood Red (small) and Large Blood Red are excellent varieties.

Coleworts or Collards are a small form of Cabbage, hardy, quick to mature and invaluable for cold districts. They are very useful for late planting or intercropping spring Cabbages, and are ready for cutting before they seriously interfere with the maincrop. Although they may be sown at any time from March to August, their greatest value lies in their suitability for late planting, therefore a July sowing is best. The treatment is exactly the same as for ordinary Cabbages, only they do not require much space when planted alone, a distance of twelve inches to fifteen inches sufficing. The variety Rosette may be thoroughly recommended.

The Savoy furnishes supplies from September to March inclusive, and as its chief merit lies in its ability to "stand" late, it is seldom required before November or even later; when subjected to a little frost its flavour is improved. A sowing may be made from March to May, but it is seldom necessary to sow early, this being a common mistake of some growers. The end of April is considered early enough for general purposes, and by making a last sowing at the end of May quite good heads may be cut late in the following March or even in April in some districts in the south.

Although the soil in which Savoys are grown should be in good condition, this does not necessarily mean that the ground should be specially manured for the crop. The plants are often grown on ground that has recently been cleared of such crops as Peas, Beans, or early Potatos, without further preparation beyond clearing it of weeds.

Planting is usually done during June and July, allowing a distance of from eighteen inches to thirty inches each way, according to the variety. Hoeing and a careful watch for pests are necessary details of cultivation.

The periodical clearing of decaying leaves from Cabbages that are intended to withstand the winter will greatly assist their keeping qualities by allowing a free circulation of air to pass between the plants. For all-round purposes, the ideal to be sought for in a Cabbage is good colour, firmness of heart, which should not be too coarse in the core, and the outer leaves not too large and numerous. For spring cutting choose a variety of hardy constitution, not inclined to bolting, and with a tendency to heart quickly. Those known to keep in good condition over a long period are desirable for winter crops.

With reference to the question of suitable varieties for each purpose, like many other subjects, a careful selection of a few of the best will suffice for ordinary purposes, the difficulty being to make a choice, as there are many of fairly equal merit. Most gardeners have their own particular favourites, those they have proved to be satisfactory in their own localities. It is always advisable to be on the look-out for even better varieties, and a trial of some of the newer introductions is always worth while. For August sowing a selection of the following varieties may be made. Harbinger is one of the earliest to heart and requires very little space in which to grow, but does not last long in good condition once it is ready to cut. Where a fairly quick clearance cannot be made, only sufficient of this variety for early supplies should be grown.

Wheeler's Imperial is a well-known variety with a splendid reputation. Ellam's Early Dwarf is a very old favourite and many gardeners still find it very profitable to grow. Flower of Spring is a little later in maturing than some of the varieties already mentioned, but it provides a succession and is always worth growing for its reliability in most districts and seasons. First Early Market, First and Best, and Early Offenham are all varieties worthy of a trial. Where a long succession is required, varieties for spring sowing may be chosen from the following, and can all be sown on the same day, for preference early in April. Dwarf Best of All, which should be ready for cutting towards the end of July, and may be followed by Enfield Market or Paragon Drumhead. Glory of Enkhuizen and Copenhagen Market are splendid varieties for autumn supplies. The well-known varieties Winningstadt and Christmas Drumhead will carry on the succession well into the season. The Savoy presents very little difficulty as regards selection of varieties. Where early supplies are required, Perfection or Early Favourite may be used. Late Drumhead and New Year are excellent for winter use. By making successional sowings of Ormskirk Late Green and Latest of All the season will be extended as far as this is possible. Belleville is a most desirable variety for small gardens or close planting as it makes small, compact heads.

At Wisley, where periodical trials of Cabbages are carried out, opportunity exists for the comparison of a large number of varieties grown under similar conditions. *J. Wilson, Wisley.*

HOME CORRESPONDENCE.

[The Editors do not hold themselves responsible for the opinions expressed by correspondents.]

Southport Show Impressions.—In the course of a fairly long career, both as exhibitor and judge, extending now over half-a-century, I never remember a horticultural show making such an impression on me. To state that everything was *par excellence* would be a trifle inaccurate, though only a trifle, for the only really weak item that I could discover was the competitive vegetable classes, which certainly deserved and required more careful attention to details, for with a few exceptions the material used was rather roughly prepared and poorly set up, whilst the question of more attractive staging and backgrounds would be well worthy better attention. Other than the foregoing, everything else was magnificent! The floral groups, collections of fruits, flowers and vegetables have, I feel certain, never been surpassed in this country, and this result has been attained in the short space of time that has elapsed since the first show was held two years ago. It was the finest and, I should say, the largest show of its kind that it has yet been my privilege to see, and the magnificent quality of the exhibits staged, the wondrous beauty of the Roses, Sweet Peas, foliage and ornamental groups, Carnations, Gladioli, fruit trees in pots, Grapes, of which probably no finer bunches with better finished berries have been staged in this country since the war; the great attraction afforded by the seven finely-conceived and ambitious rock-garden exhibits, and the superb specimens that went to form other noteworthy exhibits, all combined to show what a tremendous effort had been made, both by the organisers and the exhibitors. I was particularly impressed by the immense size of some of the groups. One pleasing feature of the show deserves special reference, and that was the Mayor of Southport's reference at the luncheon to the splendid help they had received from the authorities of the great Shrewsbury Floral Fete, and the debt of gratitude they owed for that assistance. To sum up, the Southport Show of 1926 was the finest, biggest and most ambitious effort of its kind that some of us have ever seen, and the produce shown was of the highest quality, beautifully and handsomely staged. Let us hope that it will pass from success to success, ever improving, to the great benefit of horticulturists and garden lovers generally. *Edwin Beckett.*

Vitality of Seeds (see pp. 143, 183).—The question as to how long various seeds retain their powers of germination is one full of interest to many. It is also one of considerable importance. Many professional gardeners have studied it, the present writer included. Some hold that Parsnip seeds remain viable for two years; Carrots, Leeks, Onions, Parsley, Peas and Salsafy for three years; Beetroot, Spinach Beet, Brassicas generally, Mustard and Cress, Lettuces and round Spinach, for five years; Celery, Cucumbers, Endive, Marrows and Melons for six years. My experience is that Carrot seeds do not germinate after two years; Mustard and Cress and Radishes repeatedly fail when but two years old; and it is useless to expect good Lettuces from any but fresh seeds. Four-year's-old Parsley seed, however, will germinate quite well in suitable soil. Melon seeds have been proved beyond dispute to retain their power of germination for no fewer than eighteen years. It is, in fact, a mistake to use Melon seeds of less than from three to five or even six years old, the idea being that the plants obtained from new seeds are usually so rampant in growth that they mostly fail to produce fertile blossoms, whereas the older seeds give plants of greater refinement and produce any amount of flowers of both sexes. Tomato seeds will retain their vitality for so many as nine years. Turning to flower seeds—seeds of Celosia plumosa (home-saved) have been known to germinate after eleven years. The Persian Cyclamen gives best results from seeds over two years old. Seeds of the Primula family are usually recognised as being only reliable when quite fresh, but those of some species, such as Primula sinensis, have been known to retain their vitality for so many as five years. The seeds of Tuberous-rooted Begonias germinate well when two years old, and that of Stocks does the same, but in their third year the seeds are very feeble. Delphiniums, Aquilegias, Geums, Auriculas, Polyanthuses and Pelargoniums are reliable for one year only. Cinerarias, Gloxinias and Streptocarpus germinate quite well when they are two years old. Some little while since a fellow gardener interested in this subject of seed-germination expressed a hope that I might have heard particulars as to the alleged "mummy" Pea said to have been imported from Egyptian tombs. The Mummy Pea is Pisum elatius or Glory Pea and the mummy story is a myth. *Capt. E. A. Saunders.*

Pronunciation of Plant Names.—Sir Herbert Maxwell's comment on the pronunciation of the word Gladiolus calls to my mind instances of other Latin words which few people pronounce correctly. Simple words, such as Primula, are sometimes wrongly pronounced, owing, no doubt, to neglect of the study of Latin. *Nemo Nascitor Tempo* applies to education, as well as many other things in a student's career: unfortunately, his time is occupied with things of less importance from the gardener's standpoint, at that period of his life. *Uno.*

Langprim Gladioli.—There is apparently an attempt to re-name the section of Gladioli which has resulted from the cross between G. primulinus and large-flowered varieties of G. gandavensis, etc. They were christened Langprim Gladioli by us when we sent out the first cross from Langport and received the R.H.S. Award of Merit with a Silver Medal for the strain. The first large-flowered hybrid Gladioli were called Gandavensis, through their being sent out from Ghent. M. Lemoine, of Nancy, named his blotched hybrids from purpureo-auratus, Lemoinei, and those from Saundersii he called Nancieanum. Surely our connection with Gladioli for three generations, apart from the fact that we raised this new type and first exhibited and distributed the result, entitles us to claim, and readily to obtain, the credit which is usually given to the original hybridiser. *Kelway and Son.*

John Abercrombie.—Although a great deal has been written by your correspondent, Mr. T. B. Fowler, concerning John Abercrombie, some essential details appear to have been left out, and apparently some mis-statements made. Your correspondent is rather bold also in asserting that: "For the first time detailed instructions were given to the amateur gardener." In a bicentenary article of this kind one naturally looks for a fairly complete list of the publications and also a record of the dates of the first editions if not of the later ones. In 1781, Abercrombie published *The British Fruit Gardener.* This work consists of 275 pages; four pages are devoted to a preface which contains the following footnote under an asterisk mark :—

> *Every Man his own Gardener, seven editions of which have been printed.—This work, from a diffidence in the writer, was first published as the production of "Thomas Mawe, gardener to his Grace the Duke of Leeds, and other gardeners": It was however entirely written by the author of the following sheets; whose claim has since been, in some measure, asserted, by subjoining to the Title-page of the latter edition, the name of John Abercrombie, to the more popular one of Mr. Mawe.

This footnote is certainly interesting, and does not appear to bear out your correspondent's story of Oliver Goldsmith. It is noteworthy also that Abercrombie's *Practical Gardener or Improved System of Modern Horticulture* was revised by Mr. James Mean, gardener to Sir Abraham Hume, Bart., and that the third edition of this work was published in 1823. It would be interesting to know if Thomas Mawe with the first editions, and James Mean with the revised editions, made a better living from them that did Abercrombie, who claimed to be the original author. *W. H. J., Bermondsey.*

SOCIETIES.

ROYAL HORTICULTURAL.

September 7.—Although Gladioli, Phloxes and other hardy flowers were exhibited plentifully on this occasion, and there were displays of Orchids and fruits, a large part of the hall at Vincent Square was occupied by the competitive exhibits in connection with the Society's Vegetable Show. The outstanding exhibit, in extent, brilliance and interest, was the one of splendid vegetables arranged at one end of the hall by Messrs. Sutton and Sons.

Very few floral novelties were forthcoming, and most of the Committees had little work to do.

Orchid Committee.

Present: Sir Jeremiah Colman, Bt. (in the chair), Mr. Gurney Wilson (Hon. Sec.), Mr. Frederick J. Hanbury, Hon. H. D. McLaren, Mr. H. T. Pitt, Mr. Arthur Dye, Mr. Fred. K. Sander, Mr. H. G. Alexander, Mr. Charles H. Curtis, Mr. J. E. Shill, Mr. John C. Cowan, Mr. A. McBean, Mr. Henry H. Smith, Mr. T. Armstrong, Mr. E. R. Ashton and Mr. Stuart Low.

This Committee discussed at some length the desirability or otherwise of making awards to Orchids represented only by cut flowers. Hitherto only plants in flower have been considered, but the Committee recommended that in future, under exceptional circumstances, awards might be made when flowers only are submitted.

FIRST CLASS CERTIFICATE.

Brasso-Laelio-Cattleya Irma (B.-L.-C. The Baroness × L.-C. Golden Queen.)—An exquisitely beautiful hybrid of splendid form and good size. The petals are yellow, with a faint coppery tint, and the broad petals are soft yellow. The broad and finely frilled lip is orange with gold veins, but the frilled margin is dull purplish-cerise with a pale edging. Shown by Baron Bruno Schröder (gr. Mr. Shill), The Dell Park, Egham.

AWARDS OF MERIT.

Odontonia Regina (Odontonia Gladys × Odontoglossum Doreen).—A pretty Orchid with chocolate-red markings on a blush-white ground. The rich colouring is most in evidence on the sepals and petals, and is chiefly in the form of dots on the wide, deeply-notched lip. Shown by Messrs. Charlesworth and Co.

Laelio-Cattleya Cantab var. Sunset (Cattleya Ballantineanum × Laelio-Cattleya St. Gothard).—A handsome variety represented by a good plant carrying a spike of three fine, large flowers. The sepals and petals are a rich purple, and the lip intense royal purple, with dull gold throat. Shown by Messrs. Stuart Low and Co.

GROUPS.

Messrs. Sanders were the largest exhibitors of Orchids on this occasion, and their group contained such interesting plants as Oncidium pulchellum, Paphinia cristata, Dendrobium elongatum, Cypripedium Godefroyae leucochilum, Bulbophyllum grandiflorum, the rare Masdevallia macrura, Oncidium macrochilum and Miltonia Bluntii. Their larger-flowered subjects included Laelio-Cattleya Roumania, with yellow sepals and petals; Cattleya Etta, C. Lady Veitch, C. Glow (Moira × aurea), the handsome Sophro-Laelio-Cattleya Jeanette, and the showy Brasso-Cattleya Ilene var. albanensis.

Messrs. Stuart Low and Co. submitted a few very choice Orchids, notably L.-C. Cantab var. Sunset, of splendid form and substance; Brasso-Cattleya Thompsonii albens; C. Hardyana var. His Majesty, and Brasso-Laelio-Cattleya Miss Eileen Low, with big mauve-purple flowers, and two great pale yellow blotches at the base of the large, beautifully frilled lip.

Miltonia Queen Alexandra was conspicuous in the small group from Messrs. J. and A. McBean; this carried seven of its large white flowers. With this were grouped Cattleya Hardyana alba, Laelio-Cattleya Profusion var. compacta, Cattleya Sibyl, and a deeply coloured form of Odontoglossum Uro-Skinneri.

A bright exhibit from Messrs. Charlesworth and Co. contained fine plants of Cattleya Hesta var. Albatross with five lovely flowers; C. Dionysius, Laelio-Cattleya St. George, the brilliant Cattleya Rhoda in fine form, Miltonia Dora, the beautiful Vuylstekeara Rutherford's Sylvia, and spikes of Oncidium varicosum Rogersii.

Floral Committee.

Present: Section A.—Mr. J. F. McLeod (in the chair), Mr. H. J. Jones, Mrs. E. Wightman, Lady Beatrix Stanley, Mr. J. M. Bridgeford, Mr. Hugh Dickson, Mr. James B. Riding, Mr. D. B. Crane, Mr. W. P. Thomson, Mr. Chas. E. Pearson, Mr. A. Vasey, Mr. William Howe, Mr. W. A. Bilney, Mr. Donald Allan and Mr. E. R. Janes.

Section B.—Mr. Gerald B. Loder (in the chair), Mr. Reginald Cory, Mr. F. G. Preston, Mr. T. Hay, Mr. G. Reuthe, Mr. Geo. Harrow, Mr. W. G. Baker, Mr. W. J. Bean, Mr. Charles T. Musgrave, Hon. H. D. McLaren and Sir William Lawrence, Bt.

GROUPS

Gladioli were the principal floral feature in the hall, and the various collections contained some excellent spikes of bloom. The Orpington Nurseries Co. staged very handsome spikes of Fiery Knight and Red Canna, of rich colouring; Electra, deep salmon with white marking on the lower segment; Brilliant, vivid scarlet; Chris, rich velvety crimson, lightly shaded with maroon; and Schwaben, primrose-yellow. In addition to the above particularly good large-flowered varieties they showed graceful Primulinus hybrids.

In a large collection of Gladioli, Messrs. Kelway and Son included Sir Dighton Probyn, rich crimson; Corri, pale lavender-blue; Queen of Rose, vivid salmon-pink; and Sir F. Pollock, of the large flowered varieties, with Jessie Winter, salmon and yellow markings; Lady Joan Verney, of similar but paler colouring; Delightful, rich rose-pink; and Homely Lass, flaked with chocolate on a white ground, amongst many beautiful Primulinus hybrids. Mr. A. Edwards had a well-arranged collection of Gladioli, in which Painted Lady, Pride of Kimmerland, Comtesse de Excelmans and Darius, large-flowered varieties, and Nieuport, Bergamotte, Princess Elizabeth, Dixmude and Xanthia, of the Primulinus hybrids, were very prominent. Messrs. Lowe and Gibson set up an interesting collection of seedling Gladioli of both types, with a couple of vases of late spikes of Delphiniums.

On a floor space a large collection of herbaceous Phloxes, apparently lifted from the open ground and planted into round baskets, was shown by Mr. H. J. Jones. These were sturdy, floriferous plants of considerable decorative value, and his collection included America, bright salmon-rose; Asia, rosy-lilac; Beranger, soft pink; Camillo Schneider, glowing red; Etna, deep coral-red, with maroon zone; G. A. Strohlein, large pips of orange-scarlet colour, with carmine eye; Le Mahdi, very dark bluish-violet; Mia Ruys, large white; Will Wells, rich purple, with light red flushing; and Major Pat a'Beckett, a very fine scarlet.

In the Orchid Annexe, Messrs. Isaac House and Son set up a goodly collection of their admirable Scabiosa caucasica hybrids; and the Misses Hopkins showed a selection of miscellaneous border flowers.

An extensive and imposing collection of China Aster blooms was exhibited by Messrs. Dobbie and Co. This was composed of especially well-grown flowers, chiefly double varieties of their Early Beauty and Late Beauty types, under colour names. The collection also included decorative vases of single-flowered varieties of rich rose-pink, white and mauve colouring. In another part of the hall Messrs. Dobbie and Co. staged three boards of very shapely Viola flowers "as shown in the north."

A very comprehensive collection, mostly of Earlham hybrid Montbretias, was displayed by Messrs. Barr and Sons. Numerous varieties were included, and the very best were His Majesty, Kathleen, Queen Charlotte, Goldfinch and Henry VIII.

In a corner space, Messrs. Lane's Nurseries set up a number of pot plants of Cupressus Lawsoniana Lanei. These were well-furnished, erect-growing little bushes, which had the current growth distinctly paler in colour than that of the previous year. Messrs. R. and G. Cuthbert staged a large number of single flowers of hybrid Streptocarpus in small vases. The exhibit illustrated a very desirable strain, yielding large flowers of many beautiful shades of colours.

Fruit and Vegetable Committee.

Present: Mr. J. Cheal (in the chair), Mr. W. Poupart, Mr. T. S. Rivers, Mr. G. F. Tinley, Mr. T. Pateman, Mr. W. F. Giles, Mr. W. G. Lobjoit, Mr. A. Metcalfe, Mr. T. Weston, Mr. E. Laxton, Mr. A. E. Newby, Mr. H. A. Prince, Mr. E. Neal, Mr. W. H. Divers, Mr. A. Smith, Mr. E. A. Bunyard, Mr. A. Poupart, Mr. J. C. Allgrove, Mr. A. Bullock and Mr. J. Wilson.

AWARD OF MERIT.

Apple Exquisite.—This award was made provisionally to a new Apple named Exquisite, and a deputation was appointed by the Committee to report on the cropping qualities, habit, etc., of the tree. It was raised from Cellini crossed with Cox's Orange Pippin. The fruit is as large as a well grown Cellini and freely coloured with red on the side exposed to the sun, the shaded part being greenish-yellow with a thin covering of red in blushes. The flesh is juicy, sweet and has some of the rich flavour of the Cox's Orange Pippin parent. It was also recommended that the variety be included in the trial of commercial fruits at Wisley. Shown by Messrs. Laxton Bros.

OTHER NEW FRUITS.

In addition to Apple Exquisite, Messrs. Laxton Bros. showed several new Plums, the most promising of which were Potentate, raised from Sultan crossed with Greengage; Victor, raised from Czar crossed with Victoria; and Royal Gage, a cross between Transparent Gage and Jefferson.

Sir William Lawrence showed a dwarf form of the Cape Gooseberry; he stated that the berries were excellent for making preserves and that from the fruits of one plant he had made some six to ten pounds of jam.

Mr. Edward Bunyard submitted a fruit of the old variety of Pear named Monchallard which, he stated, is now very little grown in this country. It is an old French Pear found by the grandfather of M. Monchallard, after whom it is named, in a wood, about the year 1810. Hogg describes it as an excellent early Pear, ready in September.

Mr. J. C. Allgrove exhibited a dish of Plum Jodoigne Green Gage, a dark red fruit with much of the Greengage flavour. Mr. Allgrove's purpose in showing the variety was to bring it to the notice of those growers who are not acquainted with it, for he stated that it was an excellent Plum in every respect.

GROUPS.

Messrs. Sutton and Sons exhibited a very large collection of vegetables, in all 250 dishes, of which some 240 were of distinct kinds and varieties. This very imposing collection was arranged with great skill to produce an attractive and spectacular exhibit, the blending of the various coloured subjects being done with such taste as to make the display as attractive as one of flowers. To enumerate the whole of the varieties would be to compile a list of all the vegetables the kitchen garden affords at this season, but mention may be made of the exceptionally fine New Red Intermediate Carrots, Prizetaker Leeks, Solid White Celery, Autumn Mammoth Cauliflowers, Michaelmas White Broccoli and, amongst some twenty-one distinct varieties of Onions, the flat type of the firm's selected strain of Ailsa Craig.

Messrs. T. Rivers and Sons showed pot

fruit trees, including some vines of Appley Towers with bunches of ripe Grapes. The Plum trees were especially well fruited, notable sorts being White Magnum Bonum, President, Coe's Golden Drop and Coe's Violet. Of the Peaches there were splendid specimens of Nectarine Peach, Sea Eagle and Gladstone, whilst Nectarines Pineapple and Humboldt were carrying large crops.

Mr. J. C. Allgrove showed an exhibit of fruits, principally Plums, which were of such excellence as to be a centre of attraction. As a background to his exhibit, Mr. Allgrove displayed a large, fan-shaped tree of Nectarine Pineapple with a fine crop of its luscious fruits, and in front of this a tree of Peach Dymond equally well fruited as the Nectarine. The Plums included Belgian Purple, Victoria, Early Transparent Gage, Allgrove's Superb, Monarch, Jefferson, Prince Engelbert and Jodoigne Green Gage.

Messrs. Laxton Bros. showed a number of new fruits including their new Apple Exquisite, which gained an Award. One of the most promising of the new fruits was Pear Beurré Bedford, raised from Marie Louise crossed with Durondeau, which the raisers state has melting flesh of very fine flavour. The season is October. New Plums included Laxton's Supreme, which was raised from Denniston's Superb crossed with Victoria; it ripens after the Czar and is a fine dessert variety of the Denniston's Superb type. They also showed a new Blackberry named Pollards, which bears large trusses of richly flavoured berries.

Competitive Vegetable Classes.

Thirty eight classes for vegetables were open to amateur exhibitors in the Special Amateur Vegetable Show held in conjunction with the fortnightly meeting on Tuesday last. The season has been suited to vegetables generally and most of the exhibits were of good quality.

Collections.

The most important class was for a collection of twelve kinds, distinct, in which the first prize was The Sutton Cup and £10 in money. The premier award was made in favour of Viscount Hambleden, Greenlands, Henley on Thames (gr. Mr. W. Turnham), who showed vegetables of the highest excellence, well displayed. Cauliflower All the Year Round, Celery Superb Pink, Prizetaker Leeks, Ailsa Craig Onions, Tender and True Parsnips, Best of All Tomatos, Prizewinner Beans and Phenomenon Peas were all as good as could be wished, and in addition he showed fine Arran Comrade Potatos, Intermediate Carrots and Black Beet. Second, Sir Charles Nall-Cain, Brocket Hall, Hertfordshire (gr. Mr. T. Pateman), who had very large Onions of the Ailsa Craig variety, fine Dunnottar Castle Potatos, excellent Dwarf Gem Brussels Sprouts, and big Tender and True Parsnips; third, Sir J. Tichborne, Alresford, Hampshire (gr. Mr. C. Goodchild).

Six competed in the smaller class for nine kinds, distinct, in which R. Chetwynd-Stapylton, Esq., Headlands, Great Berkhamstead (gr. Mr. W. Meager), excelled, followed by R. H. Ling, Esq., The Braes, Berkhamsted (gr. Mr. Bedford), and Earl Beatty, Reigate Priory (gr. Mr. A. Barrett), in this order. The premier exhibit contained splendid specimens of Superb Pink Celery; long, well-blanched stems of Acquisition Leeks; big Ailsa Craig Onions, and even tubers of The Bishop Potatos.

There were two classes for six kinds, distinct, (a) open to those who have not more than three employees and (b) to those who employ no gardener, and to those who employ a single-handed gardener. In the class where three employees were permitted five competed, and the first prize was awarded to R. H. Ling, Esq., for splendid King Edward VII Potatos, fine Ailsa Craig Onions, Aldenham Pink Celery, Best of All Tomatos, Peas and Cauliflowers; second, Rev. T. G. Wyatt, Horley, Surrey (gr. Mr. Shirley); third, R. B. Hoare, Esq., Sutton Verney, Warminster (gr. Mr. Penfold).

An excellent exhibit, shown by Mr. J. Day, Queen's Road, Berkhamsted, won the first prize in the other class for six distinct kinds, his Bishop Potatos, Ailsa Craig Onions and Giant Pink Celery being very commendable; second, Mr. F. Barratt, Eltham.

Potatos.—Eight competed in the class for twelve varieties of Potatos, distinct, resulting in a very keen competition. The winning tubers were shown by G. Thorn, Esq., Willesborough, Kent (gr. Mr. Head), and the varieties were White City, Di Vernon, Catriona, Ben Cruachan, Up-to-Date, Katie Glover, Great Scot, Bishop, Model, Ben Lomond, Majestic and Arran Comrade; second, Mr. J. Wells, Worth, near Sandwich, with such varieties as Majestic, Ben Lomond, Arran Comrade, King Edward VII, Di Vernon and Climax; third, H. W. Henderson, Esq., Newbury (gr. Mr. Pike); third, Mr. H. W. Henderson.

For a collection of six varieties of Potatos, Mr. G. Thorn was placed first and Mr. F. Head, Ashford, Kent, second.

Onions.—The best six varieties of Onions, distinct, were shown by Viscount Hambleden, who staged excellent bulbs of Ailsa Craig, Improved Reading, Cranston's Excelsior, Silver Globe, Crimson Globe and Sutton Globe; second, Sir Randolf Baker, Ranston, Blandford (gr. Mr. A. E. Usher).

The best salad vegetables in the class for six kinds, distinct, were exhibited by Viscount Hambleden, followed by Mr. R. Chetwynd-Stapylton.

Single Dish Classes.

Thirty classes of single dishes of specified vegetables were provided. These were for amateur competition, and no competitor was allowed to exhibit in more than five of them unless he also exhibited in Classes 1, 2, 3 and 4; in which case the competitor could enter in all or any of the single dish classes.

Generally, the entries were satisfactory in numbers, but many of the exhibits were of only moderate quality, and as the staging was of a somewhat haphazard nature the general effect was poor.

Scarlet Runner Beans were freely shown and most of the dishes were of very good quality. Mr. J. T. Hill, Westbury, Wells, who won the first prize, had a very even dish of pods averaging between twelve and fourteen inches in length. There were only five dishes of French Climbing Beans and the first prize was awarded to Sir Charles Nall-Cain, Bart., (gr. Mr. T. Pateman), Brocket Hall, Hatfield, for an excellent dish. The best of the ten dishes of dwarf French Beans was shown by Major C. B. Krabbe (gr. Mr. A. V. Gower), Calcot Grange, Reading.

Beet of both types was shown as clean, shapely roots of useful size. Mr. F. Head, Willesborough, Ashford, Kent, was first with the Globe type, and Sir J. Tichborne (gr. Mr. C. Goodchild), Tichborne Park, Alresford, Hants., was similarly successful with long roots.

There were only three dishes of fifty buttons of Brussels Sprouts, and these, though a trifle smooth, were of good shape and very firm. Mr. S. Thompson, South Darenth, Kent, won the first prize. Although there were many exhibits of three Cabbages, the majority were of only moderate quality. Viscount Hambleden (gr. Mr. W. Turnham), Greenlands, Henley-on-Thames, was first with three good heads. The six exhibits of Cauliflower were so indifferent that no first prize was awarded, while the only dish of Celeriac was awarded the third prize.

Celery was not equal to the quality of former years. The first prize for three sticks of white was won by The Hon. Sir Ronald Lindsay, C.B. (gr. Mr. Tuck), Blandford, for the variety Solid White. The red Celery was of a little better quality, and in this class the first prize was won by the Cheadle Royal Mental Hospital, Cheshire (gr. Mr. A. Falconer), with good sticks of a very pale colour. Cucumbers and Leeks also were only fair in quality. R. Chetwynd-Stapleton, Esq. (gr. Mr. W. Meager), Headlands, Berkhamsted, was first in the former class, and James Fleming, Esq., Galashiels, had the best Leeks. The best three Marrows were shown by J. Wells, Esq., Worth, Sandwich, and the only dish of Mushrooms, shown by R. B. Hoare, Esq. (gr. Mr. Penfold), Warminster, deservedly received the first prize.

The many Onions in the three classes were very good. Most of the exhibits were of well-ripened, shapely bulbs of good size. The first prize for Onions sown in the open in 1926 was won by Sir J. Tichborne, Bt., with an excellent half-dozen bulbs of Ailsa Craig. R. Abel Smith, Esq. (gr. Mr. C. Wren), Broad Oak End, Hertford, had equally good autumn-sown Onions, while the Viscount Hambleden was deservedly first with large bulbs of Ailsa Craig in the class for Onions sown under glass.

Sir Randolf Baker, Bt. (gr. Mr. A. E. Usher), Ranston, Blandford, won first prizes for Parsnips, Long Carrots and Intermediate Carrots of especially good quality, while W. H. Tyzack, Esq., High Wycombe, showing clean, shapely roots, was first in the class for stump-rooted Carrots.

There were many dishes of Peas of good quality. Most of the exhibits, including the first-prize dish from the Cheadle Royal Mental Hospital, were of the variety Gladstone.

There were four exhibits of yellow-fleshed Turnips and eleven of white-fleshed, and the best in both classes were from the Cheadle Royal Mental Hospital.

The two Potato classes were well filled with good, typical exhibition tubers. Eighteen of the twenty-five exhibitors in the class for round Potatos staged Arran Comrade, and the competition was very keen. J. L. Wild, Esq. (gr. Mr. H. E. Jolly), Kenley, Surrey, was first, and G. Thorn, Esq., was second. Majestic was the favourite kidney-shaped Potato, though King Edward VII ran it closely, and Di Vernon was shown several times. G. Thorn, Esq., was first with an excellent dish of Majestic, and J. Day, Esq., Berkhamsted, was second with very good tubers of The Bishop.

The many exhibits of Tomatos were consistently good. The dishes were of shapely, even, well coloured fruits. Many of the nineteen exhibitors, including R. H. Ling, Esq. (gr. Mr. Bedford), The Braes, Berkhamstead, who won the first prize, showed Best-of-All. The first prize yellow Tomatos were shown by Mrs. Austen (gr. Mr. Longhurst), Totteridge.

The class for any other vegetable brought a considerable variety in the exhibits, and the first prize was won by Sir J. Tichborne, Bt., with a handsome dish of New York Purple Aubergines, while Mr. R. Staward, Ware Park Gardens, Ware, was second with Stockley Park Red Cabbage.

GLASGOW AND WEST OF SCOTLAND.

As the new Kelvin Halls are not yet completed, the Directors of the Glasgow and West of Scotland Horticultural Society were placed in the difficult position of having to choose between postponing the show for a second year or going back to St. Andrew's Halls. They wisely decided upon the latter expedient, which necessitated the curtailment of trade exhibits, and by utilising the accommodation in the basement for vegetables the complete space in the three main halls was available for staging fruits, flowers and decorative classes. It proved adequate for the entries, which numbered 2,500, but the passages were very congested on Wednesday and Thursday, and the public had little opportunity for inspecting the exhibits under comfortable conditions.

Pot Plants.

There were forty-seven classes in this section, but the entries only exceeded the number of prizes offered in a few instances. Mr. Robert Paterson, Cathcart, had no opposition in the two Orchid classes, and Mr. James Templeton, Richmond House Gardens, had a similar experience in the three classes for Palms, and also in the class for three ornamental foliage plants, three Kochias and three scented Geraniums. Mr. John Davidson, gardener to Sir John Reid, Ardencraig, Rothesay, excelled in the class for six Nephrolepis, and six Ferns for table decoration, and among other prominent prize winners were Messrs. George Gray, junr., Carluke, Mr. Claude Jenkins, Cambuslang, Mr. John Welsh and Mr. James Sidey, Glasgow.

Collectively, Roses made a good show, but the individual blooms were uneven in quality. In the open classes it was a repeated competition between four nurserymen with varying results. Messrs. Thomas Smith and Sons, Stranraer, staged the best six baskets of decorative varieties of which Mrs. Wemyss Quin, Ophelia, Betty Uprichard, Madame Edouard Herriot and Lady Inchiquin were strongly represented. Messrs. D. and W. Croall, Dundee, who were placed second had fine baskets of Shot Silk and Los Angeles. In the class for thirty-six blooms Messrs. Adam and Craigmile, Aberdeen, were first.

The competition for twelve blooms of new Roses constituted an interesting class, and Messrs. D. and W. Croall excelled with outstanding specimens of Shot Silk, Lady Inchiquin, Simone, Tosen d'Or, Diadem and Sunshine. Messrs. Adam and Craigmile won the second prize.

Mabel Morse was the only variety shown in the class for twelve yellow Roses in which Messrs. Adam and Craigmile excelled, and they also carried off chief honours for twelve Roses of any other colour with a seedling named Elizabeth W. Adam, which may be described as a distinct cerise-pink shaded flame towards the edges. Messrs. D. and W. Croall also excelled in the classes for pink and white Roses with Mrs. Henry Bowles and Frau Karl Druschki, while George Dickson, staged by Mr. Sandy Dickson was preferred to Hugh Dickson and Capt. Kilbee Stewart in the reds.

The display of Sweet Peas has never been excelled at the Glasgow September show. The entries were large, especially in the classes for six varieties, and the single vase classes, which ranged in number from nine to twenty. There were nineteen classes in this section, and the exhibits occupied both sides of two long tables and one side of a third. Three entries were staged in the class for twenty-four vases and the honours went to Mr. James Smith, Crawford Priory, Ladybank; second, Mr. J. A. Grigor, Banff.

Mr. Grigor was placed first in the class for six vases of 1926 novelties, which consisted of an outstanding vase of Gold Crest, together with well-grown examples of Venus, White Lady, Royal Pink, Sybil Henshaw and Mermaid. The Banff grower was also successful in the classes for twelve vases and six vases, and in the single vase competitions he excelled in the following classes:—cream pink (Venus); lavender (Powerscourt); white (Constance Hinton); and purple (Royal Purple).

In the class for nine vases, Mr. James Logan, Old Cumnock, defeated Mr. Paul and four other opponents.

Cactus Dahlias were poorly represented, and interest chiefly centred in the Collerettes. The entries in the single vase competition numbered so many as twenty four, and the exhibits, which occupied one side of a long table made a display that was reckoned to be the best in the Society's history.

Favoured by the weather and being an early season, Chrysanthemums were seen at their best. The principal prize winners in the fifteen classes were Messrs. Torrance and Hopkins (twelve vases), Thomas Nelson, Rutherglen (six vases), W. P. Blyth (three vases), Dan A. Stewart, Balmata, and James Nesbit, Clarkston.

Carnations were a small class as a result of an early season, but herbaceous Pansies and Violas, Antirrhinums and annuals were quite up to the average in numbers and quality.

The display of fruit was of a meritorious character, and competition was close, especially in the collections of nine dishes, where only one point separated the first and second prize tables staged by Mr. William Smith, Dunecht, Aberdeen, and Mr. Alex. McBean, Yester Gardens, Gifford, respectively. The latter won full points for Pears, but Melons and Apricots were weak, while the former excelled in Melons and Peaches. The third prize was awarded to Mr. A. T. Harrison, Culzean Castle.

The Grapes exhibited in the class for eight bunches were a little disappointing in weight and somewhat uneven in other qualities. Muscats were not shown so well as formerly, but fairly good bunches were to be found among the black varieties. The first prize bunches grown by Mr. Charles Traill, Castle Levan, Gourock, made a good, all-round exhibit; and he also excelled for four bunches of Black Hamburgh and Muscat of Alexandria and one bunch of Black Hamburgh. The class for two bunches of Black Hamburgh was outstanding for weight and finish, and it took the judges much time to decide the merits of the ten pairs. Eventually the winner proved to be Mr. David Andrie, with Mr. John Halliday, Bagatelle, Greenock, runner up. The three classes for white Grapes were won by Messrs. John Orr, Dalnair Gardens, Drymen, William Smith and David Rhind, Drymen, while Mr. John Halliday repeated his former success in the class for one bunch judged for bloom.

The leading prize-winner in the Apple classes was Mr. William Smith, who carried off the honours in the classes for collections of culinary and dessert Apples.

With few exceptions the vegetable exhibits reflected a high standard of culture. Mr. John Gray, Uddingston, created a new record by winning in three classes for collections containing fourteen, thirteen and ten varieties, while Mr. Robert A. Grigor's, Dalswinton Gardens, Dumfries, list of successes in the Potato competition consisted of nine first prizes. To that total he added awards for two Red Cabbages, six Globe Beets, six white Turnips, twelve pods of Broad Beans and twenty-four pods of Peas, a truly fine achievement. Other notable successes were made by Mr. James Paul (Onions, Carrots, Parsley); Mr. Joseph Devoy, Stranraer (Cos and Cabbage Lettuces, Carrots, Globe Beet and a collection of eight varieties of vegetables); and Mr. Claud Jenkins, Cambushlang.

NATIONAL CHRYSANTHEMUM.

The Floral Committee of this Society held its first meeting of the season at the Royal Horticultural Hall, on Monday, September 6, at 3.15 p.m., when there was a fair attendance of members, but no novelties were forthcoming. The only business done was that of passing the minutes of the previous meeting and appointing a Chairman for the ensuing session. On the motion of Mr. Howe, seconded by Mr. Mills, Mr. D. B. Crane was unanimously re-appointed chairman, and Mr. Crane suitably acknowledged the honour thus paid him.

Obituary.

Andrew Baxter.—This well-known horticulturist died on Wednesday, at Newarthill, where he had resided for thirty-five years. He was born at Wishart sixty-eight years ago. Mr. Baxter was a keen enthusiast in Pansy and Viola culture and for many years acted as a judge at the shows of the Scottish Pansy and Viola Association. He was a frequent contributor to the Gardening Press on these subjects, and took an active interest in the social affairs of the district in which he resided.

TRADE NOTES.

For the convenience of residents in the London area a special showroom has been opened by Messrs. Boulton and Paul at 135-7, Queen Victoria Street, London, E.C. 4. Often it is a little difficult to purchase from a catalogue and in this new showroom specimens of greenhouses, garden frames etc., may be seen.

A prominent firm of nurserymen and seedsmen writes us as follows:—"We should like to know whether any of your readers are experiencing the latest phase of slimness on the part of some foreigners out to capture the British market in horticulture by any possible means. We refer to their getting hold of British novelties, indirectly, if they cannot manage it directly, and although propagating and offering them on the British market both wholesale and retail at cut prices, finally evading payment on the plea that they were worthless or not true to description, thus adding insult to injury and giving the British raiser a bad name for unreliability."

[We advise customers of unknown foreign firms to ascertain the bona fides of the latter from grower's associations in the respective countries].

Messrs. Kelway and Son write:—We feel sure that it will be of interest to put on record, once for all, the origin of the hybrids resulting from crossing the species Gladiolus primulinus with the large-flowered hybrid Gladioli (gandavensis). Sir Francis Fox sent us, and to the Royal Kew Gardens, in the year 1905, the first corms of Gladiolus primulinus which were introduced into Europe. Mr. Townsend, who was in charge of the building of the Zambesi bridge in 1903, had collected these bulbs and had sent them to Sir Francis Fox, a partner in the firm who were building the bridge. Our Mr. James Kelway handed them at once to Mr. Field, the foreman of our Gladiolus department, with instructions to grow them inside until their hardiness was known, and then outside, and to cross them as soon as possible with the best varieties of the large-flowered section, the descendants of Souchet's varieties, which sprang from gandavensis. In 1922, *The Times* published a statement that the Dutch and American nurserymen were responsible for the production of this beautiful new race of Gladioli. We wrote to *The Times* contradicting this, but the letter was not inserted. We then wrote to Sir Francis Fox, who, in his reply, substantiated the facts we give above, and added, "I do not think the Dutch growers had any for some years after. I regard you as having produced the earliest and most beautiful results." Messrs. Lemoine, the well-known French raisers, raised a cross between Gladiolus primulinus, and one of their Lemoinei section. We have seen these varieties, which are very similar to the well-known Lemoinei hybrids in shape and as well as very much smaller, and quite distinct from the section now so popular.

The corms sent to us by Sir Francis Fox in 1905 flowered in 1906 and were hybridised and used for hybridising. In 1912, the Royal Horticultural Society gave us an Award of Merit and their Silver Floral Medal for our exhibit of flowers from the strain, and the National Gladiolus Society at the same show gave us an Award of Merit for the hybrid variety which we had named Golden Girl. *The Times*, of the 17th July, 1912, referred to our exhibits as being real novelties, and the various horticultural papers of the same period wrote of them as thorough novelties and gave us credit for raising them. One of the notices in 1912 mentions that we had exhibited them before the Royal Horticultural Society "at a previous meeting." This was probably in 1910. The first hybrid varieties of this section which were ever catalogued by anyone were our Golden Girl, Ella Kelway, Josephine Kelway, Ralph, Friendship, Banshee and Elf. All these were offered to the public in 1913. During the war, work on this new Gladiolus naturally ebbed in the countries which were at war. Holland and America were able to go ahead with such material as they had, but we should like it known that it is due to Sir Francis Fox's kindness in sending us the species, and to our Mr. James Kelway who supervised the work of crossing, that the credit of the inauguration of this now popular flower is due. The press in 1912 suggested that some special name be put to these Gladioli, and we distributed them under the name of Gladiolus Langprim—Lang for Langport, Prim for primulinus.

ANSWERS TO CORRESPONDENTS.

Antirrhinums Failing.—*J. D., Melton.* The specimen received was not in a suitable condition to enable us to determine the cause of the stems not breaking into flower, but we think neither fungi nor insects is responsible.

Apple Foliage Unhealthy.—*C. F.* The disease is undoubtedly silver-leaf, which is now not uncommon in Apples.

Blight on Apple Trees and Silver-leaf, Disease.—*R. D. P.* So many insect and fungous troubles are called "blight" that we cannot be certain to which you refer. If you mean American blight, the best treatment for this pest is to brush into the affected spots either methylated spirit or any of the advertised aphis (green-fly) washes, used undiluted. This will check the trouble, but will not cure it permanently, as the trees are liable to be re-infested another year by insects which migrate from the roots. There is no cure for silver-leaf. Young trees sometimes recover naturally, and older trees may often be saved if affected branches are cut off close to the stem, provided the rest of the tree is still sound. A mature tree that is silvered all over is practically hopeless, and should be grubbed up and burnt. Once it begins to die back you are legally bound to destroy it.

Carnation Leaves Diseased.—*H. S.* The specimens sent are affected with leaf-spot, Heterosporium echinulatum. If only a few plants are affected, the diseased leaves should be picked off and burnt, and the healthy foliage dusted with sulphur. This fungus is rarely serious, and may be obviated under glasshouse conditions if the ventilation is good and the plants watered at regular intervals; avoid watering the foliage.

Celery Diseased.—*C. A.* Your Celery is attacked by Septoria apii. This disease may be controlled by sterilising the seeds with hydrogen peroxide. When the disease appears in the seed-bed the plants should be sprayed with Bordeaux mixture so soon as they appear above ground, and once or twice a week until transplanted. Diseased Celery in the garden should be sprayed with Bordeaux mixture at intervals of ten days.

Cyclamen Attacked by Grub.—*A. R.* The grubs attacking the roots of your Cyclamen plants are the larvae of the weevil, Otiorhynchus picipes. Grubs that are below the surface of the soil may be destroyed by the use of bisulphide of carbon or vaporite. The perfect beetles feed at night, and they drop from the plants on being disturbed suddenly, especially if a bright light is flashed amongst them. By spreading a white cloth beneath the plants you would be able to trap the beetles easily, or sheets of paper smeared with a sticky substance might be used instead of the white cloth.

Gerbera Jamesonii.—*A. G.* Keep the seedlings of the older batch of plants in a cool house or even a cold frame during the winter, affording them water at the roots carefully during the winter, but never drying them off entirely, as they are naturally evergreen. There is no readon why you should not plant the others out in a frame now, especially as you have means of heating it, which will prevent the plants from suffering from damp during the winter; planted at this time they should become established at the roots, and thus be in a good condition to start into growth strongly next spring. They should be given a deep, well-drained root-run; a depth of at least two feet. To ensure free drainage the soil should be mixed with plenty of gritty material or even small stones. Planted in this way very little watering should be necessary during winter, and no more fire heat than is necessary to protect the plants from damp and severe frost.

Grapes Unsatisfactory.—*Eltham.* Your "roof-glass is very dark with sooty accumulation which has not been washed for years," and you are afraid to use soap and soda which "would shift the paint." Dip a piece of rag or a sponge in methylated spirit and rub the glass with it. The dirt will be loosened and easily removed, either with water or without it. You need not rub the paint. As you state that your vinery is on the east side of the dwelling house and consequently needs ventilating by 5 a.m. (summer time) on a bright norning, it will be advisable to leave some top ventilation on all night. For several years your vines have started "weaker every spring." We are afraid that with the weakly, gnarled laterals, the canes are in a hopeless condition. If you decide to plant fresh vines now, the border made two years ago is not yet exhausted, and presuming it was properly made, a thorough aerating by turning it over two or three times and adding a little decaying vegetable matter should bring it into a suitable condition for replanting.

Land Cress.—*B. P.* Beds of Land Cress are not permanent in character, and to maintain constant supplies annual sowings must be made. The plant is a biennial and seeds may be sown at any time during spring and summer, but the resulting plants will produce seed and complete their life cycle the following year, hence the necessity of annual sowings.

Mildew on Clematis.—*G. H. K.* There have been several complaints of Clematis being attacked by mildew this year, the season presumably favouring the disease. We recommend dusting the plants with black sulphur by means of sulphur bellows. Lack of potash in the soil is supposed to favour mildew in cereals, and it is possible that applications of this substance to the border might reduce the liability of your Clematis to attack next year.

Names of Plants.—*A. W. G.* 1, Spartium junceum; 2, Stachys lanata. *J. S.* Spiranthes spiralis, Lady's Tresses.

Red Plum from a stone of Greengage.—*E. H.* When a Plum stone is taken haphazard and planted, the result is a seedling of which only one parent is known, and there is no reason why the fruit should resemble that parent. No one can say what the result will be. If you planted fifty stones you would probably get as many different results. The Plum you send certainly has a Greengage flavour, and it seems quite likely that it originated as described. We do not agree that it resembles Monarch. It is of excellent quality and well worth perpetuating.

Rose Canker.—*A. J. M.* The Rose stems are attacked by a fungus which causes canker. This accounts for the wilting of the flowers and for the damage to the foliage. Stems showing cankers whould be cut out and burned.

Roses Diseased.—*Puzzled.* Your Roses are, as you suspect, infested with rust disease, which is caused by a fungus, Phragmidium subcorticum. The leaf sent shows the fungus at a late stage presenting a blackish appearance instead of the orange colour characteristic of the disease earlier in the season. At the present stage of the disease rust spores are forming which are able to withstand the winter and carry over the fungus to another growing season. Amongst fungicides which are recommended are liver of sulphur, potassium permanganate solution and Bordeaux mixture. The simplest method is to spray the plant with potassium permanganate solution (one ounce in five pints of water, with two ounces of soap added); gather as many of the fallen leaves as possible and burn them. If the old, weakly plants of H.P. varieties are very badly diseased, we recommend you to dig them up and burn them.

Rose Leaves Damaged.—*A. H.* Your Rose leaves have been attacked by the Rose slugworm, Eriocampa rosae, which causes much disfigurement and checks the growth of the bushes. This sawfly may be killed by spraying the bushes with a nicotine wash consisting of three-quarters of an ounce to one ounce of nicotine (90 per cent.), two ounces of soft soap and ten gallons of water. The soap should be dissolved in warm water and, when cool, add the nicotine

Strongest Tobacco.—*M. L. P.* The Tobacco plant which yields the strongest Tobacco is Pennsylvania Seed Leaf, but Nicotiana colossea has the largest leaf. The plant sent was Acanthus spinosus.

Tomatos Diseased.—*C. C.* Your Tomatos are affected by the fungus known as black rot. It is believed that this fungus gains an entrance to the fruit through minute cracks in the skin. All diseased fruits should be removed and burnt and the plants sprayed occasionally with potassium sulphide. The best means of prevention is to spray the plants with this specific early in the season when they are setting their fruits. Air should be admitted to the house on all favourable occasions, and care must be taken to prevent an excess of moisture in the atmosphere.

To Destroy White Fly.—*B.* We advise you to write to Messrs. W. Wood and Sons, Taplow, Buckinghamshire, who will be able to supply you with a white fly exterminator and also frames for wreath making.

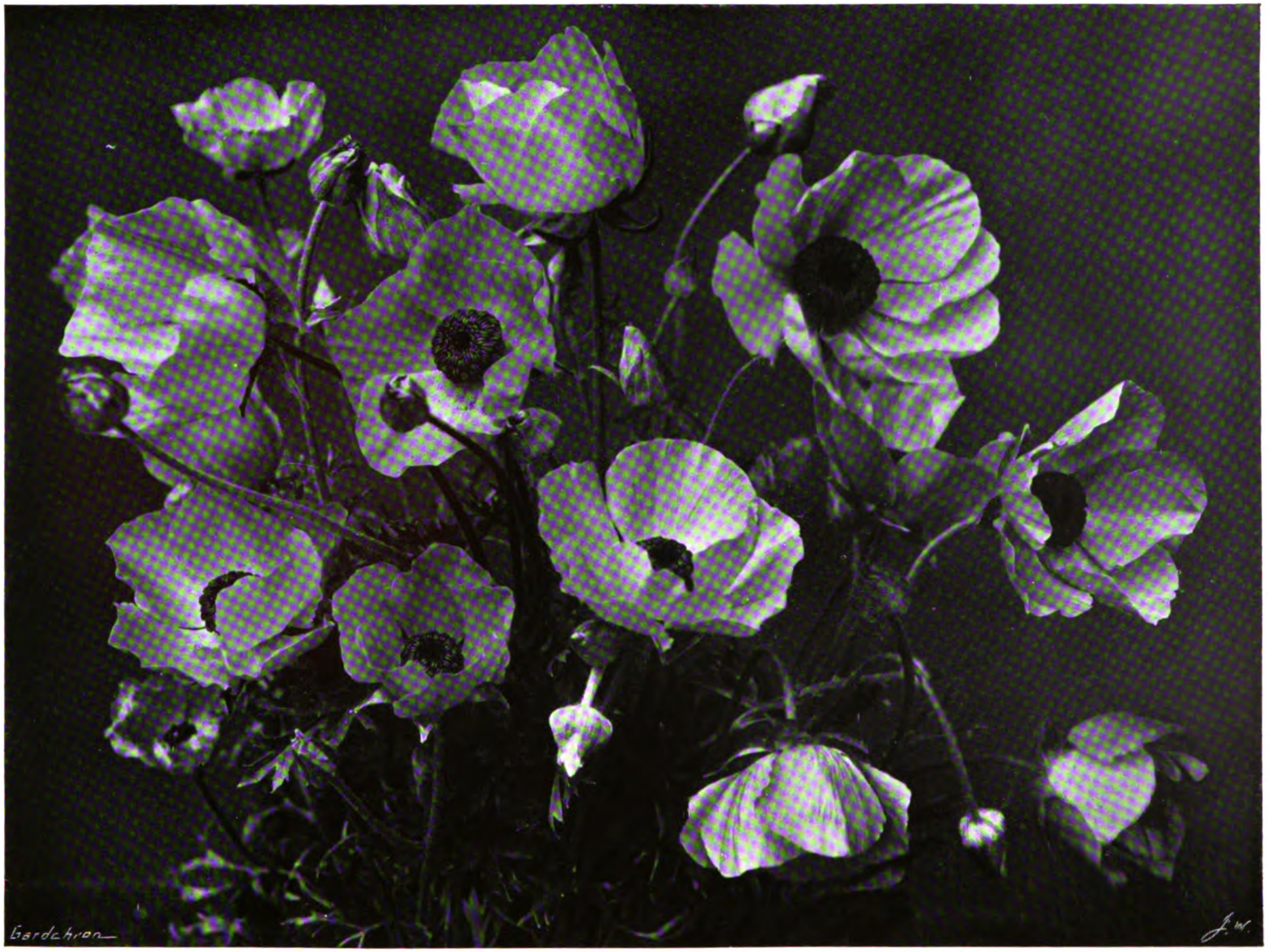
Vine and Chrysanthemum Leaves.—*J. S.* Some of the vine leaves you sent show signs of "Dropsy" (see reply to *A. T.*). Eelworms are invisible to the naked eye, so you may be mistaken in supposing your soil is free of them. The Chrysanthemum leaves also have the appearance of being exposed to too damp conditions. Some cladosporium is present, but no eelworm.

Vine Leaves with Brown Spots.—*A. T.* The brown spots on the vine leaves you sent are the result of advanced oedema or "Dropsy," caused by the air being too moist and the light being insufficient. An improvement should result by drying the atmosphere, increasing the ventilation, and paying careful attention to watering.

Weeds in Pond.—*J. S. B.* Ascertain the amount of water contained in the pond by multiplying together the average length, breadth and depth, and multiplying the result (in feet) by six-and-a-quarter, the approximate number of gallons in a cubic foot. This will give you roughly the number of gallons of water in the pond, and one pound of copper sulphate should be used to every 100,000 gallons. Break the copper sulphate into small portions and tie it in a bag of loosely woven material, such as coarse sacking. Then tie the bag behind a boat and draw it along on the water in parallel lines about ten to twenty feet apart. If used in the proportions given above the copper sulphate will not be likely to injure the fish and may even benefit them by ridding them of parasites.

Wire Enclosure for Fruit.—*H. P.* In practice it is found that fruit trees do not succeed so well when permanently and completely enclosed with galvanised wire netting, and it is better to construct the sides of the cage with wire netting leaving the top to be covered with ordinary netting during the fruiting season. If it is desired to cover the whole structure with wire-netting the top should be so arranged that at least part of it is moveable, so that the fruit quarter can be partly freed when the crop is gathered.

Communications Received.—E. H. Thanks for 1/- for R.G.O.F. Box.—W. P. & Co.—A. M.—T. C.—G. H. W.—P. A. V.—R. K.—F. S.—W. H. S.—E. C. B.—P. C.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J.W.

RANUNCULUS ASIATICUS.

THE Gardeners' Chronicle

*No.*2073.—*SATURDAY, SEPTEMBER* 18, 1926

CONTENTS.

Alpine garden—
  Hypericum reptans 226
  Symphyandra Wanneri 226
  The taller Armerias 226
Bog garden—
  Ourisia coccinea ... 226
Books, notices of—
  Geschichte der Gartenkunst ... 233
Cockayne, Dr. L. ... 222
Edinburgh Botanic Garden Guild ... 221
Flower Garden—
  Dahlia Coltness Gem 226
  Wallflowers ... 226
Flowers and fishes in Berlin 223
Fruit crops, remarks on the condition of the 234
Fruit register—
  Peach Barrington ... 235
  Select Early Apples 235
Fruits, the best hardy 222
"Gardeners' Chronicle" seventy-five years ago 223
Guano, Peruvian ... 223
Hardy herbaceous plant, what constitutes a 234
Hydrangea, a large ... 236
Indoor plants—
  Lilium longiflorum . 227
  Sweet Peas under glass 227
Iris garden—
  Inexpensive Bearded Irises 226
Mesembryanthemum . 228
Michaelstowe Hall, Harwich 232
Nursery Notes—
  Annual flowers at Reading 234
Obituary—
  Holford, Sir George 240
  Kinggett, R. ... 240
  Waterer, Hosea ... 240
Park gardeners' outing 222
Plant integration ... 221
Ranunculus asiaticas 221
R.H.S. Hall, the new 222
Societies—
  National Dahlia ... 239
  National Rose ... 236
  Royal Caledonian ... 237
Trees and shrubs—
  Potentilla 232
  The Irish Heaths ... 232
Vegetable garden—
  Potatos for heavy land 236
Viola gracilis 230
Week's work, the ... 224
Welsh garden, notes from a 228
Wireworms in glass-houses, the control of, with cyanogas ...233
Woodland garden—
  Montbretias in woodland 229

ILLUSTRATIONS.

Apple Exquisite 235
Brasso-Laelio-Cattleya Irma 227
Cockayne, Dr. L., portrait of 222
Hydrangea at Niton Undercliff, Isle of Wight, a specimen 225
Michaelstowe Hall, Harwich: terrace gardens and dry wall at, 231; the rock and water gardens at ... 230
Punctillaria Roodiae 229
Rose Patience 223

SUPPLEMENT PLATE.
Ranunculus asiaticus

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last fifty years at Greenwich, 55.7.

ACTUAL TEMPERATURE—
The Gardeners' Chronicle Office, 5, Tavistock Street, Covent Garden, London, Wednesday, September 15, 10 a.m. Bar. 30.2. Temp. 66°. Weather, Dull.

Plant Integration. THE subject of Plant Integration which was discussed by Sir Frederick Keeble in the semi-popular lecture delivered at Oxford before the Botanical Section of the British Association is one of the greatest interest to horticulturists. As the lecturer explained, although the term Plant Integration might be obscure, the idea which underlies it is extremely simple. From the cradle to the grave each kind of plant preserves its identity. Though made up of diverse parts it manifestly is and remains an individual. Whence arises this oneness and how is it maintained; these are the questions which any investigation of plant-integration must attempt to answer. It is tempting to suppose that the control which a plant exerts over its own development and its special form is similar to that which the higher animals are known to exert. Now it is well established that growth, development and behaviour of any one of the higher animals are the outcome of a dual system of control. The components of this system may, for convenience, be distinguished, one as a physical, the other as a chemical system. The physical system of control in an animal has its outward expression in the nervous system. By means of this system messages which are called nervous impulses are despatched along nerves from a central office—the brain or other part of the central nervous system—to special, effective apparatuses as, for example, muscles, which as a result of the receipt of a message are stirred up to activity. Thus muscles contract and effect movement, or glands secrete, and so on. The second component of this system of dual control—the chemical—consists in the production and distribution in the blood stream of special chemical stimulatives which are known as hormones. Distributed universally in the blood stream each of these hormones produces an effect only on certain tissues. Thus, for example, the presence of food in the alimentary canal induces the formation of a hormone which, discharged into the blood stream, is carried to all parts of the body. Only when it reaches the pancreas, however, does the hormone produce a recognisable effect. That organ it stirs up to secretion with the result that when the food reaches the appropriate part of the alimentary canal pancreatic juice is there to meet and digest it. When, however, the plant physiologist reviews the evidence of the method of control whereby plants maintain their integrity, he discovers that the existence of any counterpart of the physical method of control, patent in animals, is exceedingly hard to demonstrate. It is true that Sir J. C. Bose has brought forward a large body of evidence which he holds demonstrates the existence of nerves in plants. But the evidence is of an indirect rather than of a direct nature, and at all events, in Sir Frederick's opinion, it is by no means conclusive. Indeed, the lecturer maintains, as a result of a review of much evidence, that the plant differs fundamentally from the animal in that it produces not a dual but a single system of control. That system is the chemical or hormonic control and he believes that it will ultimately be proved that all the influences which each and every part of a plant exerts on every other living part are of a chemical nature. In support of these views he brought forward a number of observations, some made by other investigators and others made recently in his own laboratory. He cited, for instance, the discovery made by the Italian physiologist Ricca and already recorded in these pages, that the leaf movements of Sensitive Plants (Mimosa pudica, etc.) are brought about by the transmission of hormones from the seat of disturbance to the seat of change. Other examples all point to a similar conclusion. One of the most striking of the facts to which he appealed is the behaviour of roots, the tips of which have been removed. If the extreme tip of a root measuring but 1 mm. in length be removed, the growth of the root is checked or arrested. If, however, the wounded stump be washed thoroughly in running water the arrest of growth is far less. If still water be used for the washing, the rate of growth of the root is intermediate between that of the unwashed root and that washed in running water. The conclusion to be drawn would appear to be that the shock effect of amputating a root is in part attributable to the formation, as the result of cutting into the tissues, of a growth-inhibiting substance, which substance, being diffusible, is washed away by the current of water, and thereby is prevented from reaching the growing regions, the growth of which is therefore unchecked by it. No less interesting is the statement that it is possible to demonstrate what every gardener recognises as occurring in nature, namely, the influence of the stem on the rate of growth of the root. This line of investigation indicated by the lecturer is, of course, as yet too insufficiently explored to allow of confident or final generalisation. Nevertheless, the results so far obtained would seem to justify the belief that the obscure and diffused, yet nevertheless supremely efficient, means employed by plants to ensure and maintain their oneness are in large measure, if not entirely, of a chemical, or, as we may say, hormonic nature; and that plants are able to dispense altogether with the second system of control—that by means of a system of nerves emanating from a central nervous system.

Our Supplement Plate.—In the present issue we present our readers with a Supplementary Plate representing Ranunculus asiaticus, a summer-flowering species, native of the Orient and Persia. R. asiaticus in its many forms is widely cultivated and is an old garden plant whence both the Persian and the Turban Ranunculi, formerly greatly beloved by florists, have been evolved. The flowers of R. asiaticus are variable in colour, ranging from yellow through orange to deep scarlet and in some instances they are white or purplish. Many varietal forms have received garden names, such as africanus, sanguineus, tenuilobus, vulgaris and superbissimus. Under cultivation R. asiaticus has shown even greater variation than in the wild state and has lent itself to the art of the florist-raiser over a long period of years. For some time past the double forms have been less popular than formerly but at present there is an increasing interest in them at home, on the Continent and in America.

R.H.S. Fruit Show.—The Schedule of the R.H.S. Fruit Show, to be held in the Society's Hall, Vincent Square, Westminster, on October 12 and 13, contains 170 classes in seven divisions. There are a few minor alterations in the schedule as compared with the previous year, and they include increased prizes for fruits grown under glass or otherwise, the reduction of the number of varieties required in the largest class for Grapes to four, and the inclusion of a class for a collection of eighteen dishes of hardy fruits, all these being in Division I, open to amateurs only. The Nurserymen's Division has been amended by the provision of a new class for the smaller nurseries, whilst in the class for market growers, there are additional classes for Apples and Pears packed in Peach boxes and two classes for Grapes. In Division IV, for fruits grown in the open, a special class for one dish of Peaches is included, for which the first prize is £1, and the second, 15/-. In the single-dish classes for Apples, classes for the varieties Monarch, William Crump and St. Cecilia have been added. Unlike the vegetable Show, the special Fruit Show will not be held in conjunction with the R.H.S. fortnightly meeting, but non-competitive exhibits of fruits from both nurseries and private gardens will be welcomed, and applications for space for flowers and vegetables will be considered if sent not later than the first post on Wednesday, October 6.

Edinburgh Royal Botanic Garden Guild.—The annual general meeting and dinner of the Royal Botanic Garden (Edinburgh) Guild was held at Ferguson and Forresters, 129, Princes Street, Edinburgh, on the evening of Wednesday, September 8. Professor W. Wright Smith, the President, occupied the chair. After the business meeting members and friends, to the number of fifty-two, dined together. The guests of the evening were Mr. Jeffrey, Superintendent of the Edinburgh Parks; Mr. W. Thomson and Mr. William Austin, nurserymen. The after-dinner speeches were a feature of the evening and the programme of music was enjoyed by all present.

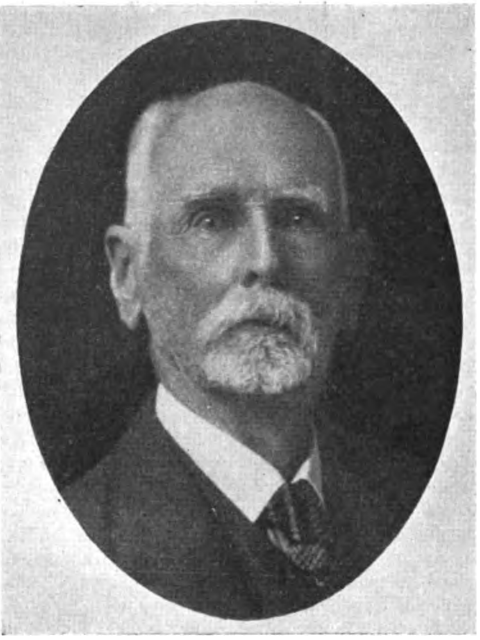
Rose Show in Aid of a Local Hospital.—The recent Newport Summer Rose Show, held in the grounds attached to the residence of Sir John and Lady Davies, was the most successful of the series, and a profit of over £211 was made, of which £200 was handed, over to the funds of the Royal Gwent Hospital Newport.

New Sweet Pea Trials..—The Sweet Pea trials conducted by the National Sweet Pea Society, and the Scottish National Sweet Pea and Rose Society represent two distinct methods of culture, the former body favouring the natural method of growing the plants, while the latter adopts the single-stem system. Naturally-grown blooms are admittedly the best test of the value of a variety from the point of view of garden decoration, while the exhibition qualities of a new introduction are best realised by single-stem treatment. Some growers favour the English method and contend that Sweet Peas which are a success when grown naturally will produce flowers of exhibition merit when grown on the plan adopted by exhibitors. Raisers like Mr. Malcolm consider that the ideal test would be realised at the trials by growing a few plants of each variety on both systems, but lack of space or expense has stood in the way of its realisation. The problem is now to be solved in Scotland by the enterprise of Messrs. Austin and McAslan, Glasgow, who have arranged to devote an acre of ground at their Cathcart nursery, and in the coming season the newer varieties in commerce will be cultivated side by side on the natural and single-stem methods under the personal supervision of Mr. H. Stewart Paton. The seeds are to be sown in pots early in October, and the seedlings wintered in frames and in all probability the results of the trials will be open to inspection by the public sometime in July. While the scheme is not intended to interfere with the official trials, any new varieties which are sent by raisers will be included in the Cathcart tests.

The New R.H.S Hall.—The Secretary of the Royal Horticultural Society informs us that the contract for the erection of the new Hall in Greycoat Street, behind the site of the present Hall, has been let to Messrs. Foster and Dicksee of Rugby for completion within sixteen months. Messrs. Easton and Robertson, of 36, Bedford Square, W.C., are acting as the Society's architects, and Dr. Oscar Faber, O.B.E., of 37, Duke Street, Oxford Street, W., as Consulting Engineer for the re-inforced concrete work.

The Best Hardy Fruits. — Amongst the numerous publications of the Royal Horticultural Society, one of the most useful is that entitled *A Selected List of Hardy Fruits** of which a new edition has recently been issued. The varieties of the different kinds of fruits which are included in the list have been selected for their quality, fertility, satisfactory growth and hardiness, and such lists are of inestimable value to planters who are often in doubt as to what to choose when confronted with the innumerable varieties in nurserymen's lists. One of the great advantages of these lists, which have been drawn up by experts, is that they commence with the very earliest varieties and finish with those which extend their season to the latest. Thus, those who intend to plant, say Apples, may easily make a selection of the very best of the earliest Apples, both culinary and dessert, as well as the pick of the late sorts and so on for Pears, Plums, Damsons, Cherries, Peaches, Nectarines, and the small fruits. In addition to these there are lists of the newer kinds of fruits which are worth trying, but not sufficiently well known to pronounce definitely on their behaviour as to fertility, habit, etc. Gardeners in the colder districts of the north of England and Scotland will find lists of fruits suitable for the less favourable conditions in which they garden, and information is given as to whether any particular variety requires to be grown against a wall. Much other valuable information is contained in the booklet, including particulars of training, methods of planting and pruning. There is also a fruit garden calendar giving operations in the fruit garden from January to December. Each variety of fruit recommended is accompanied by a short description.

Dr. L. Cockayne, F.R.S.—Dr. L. Cockayne, who is Hon. Botanist of the State Forestry Service of New Zealand, has been investigating the vegetation and the flora of New Zealand for nearly forty years. He has explored botanically all parts of the region from the extreme north of North Island to the Chatham and Sub-antarctic Islands, and he has discovered many excellent garden plants, including Astelia nivicola, A. Petriei, Celmisia angustifolia, C. glandulosa var. latifolia × C. Morrisonii, C. lanceolata, Craspedia maritima, Epilobium chloraefolium var. kaikourense, E. pernitidum, Hebe annulata, H. Cockayniana, H. gigantea, H. glaucophylla, H. Laingii, H. Dorrien-Smithii, H. rigidula, H. subalpina, Myosotis explanata, M. saxatilis, Nertera Balfouriana, Ourisia Cockayniana, O. Macphersonii, O. modesta, Raoulia cinerea, Senecio southlandicus and Suttonia Coxii. In addition to being a keen botanist he is also an ardent gardener, and for a number of years has had a private experimental garden near Christchurch, South Island, which contains a wealth of interesting plants including many thousands of species of herbaceous perennials, alpines, bulbs, trees and shrubs, mostly raised by himself, the seeds having been procured in exchange with botanic gardens, nurserymen and others, in all parts of the world. He has made a special study of the indigenous species of New Zealand from a garden point of view, and has published a work on the subject entitled *The Cultivation of New Zealand Plants*. When residing near Christchurch he was for some time Hon. Secretary of the Horticultural Society of Canterbury, and one of the founders and Hon. Secretary and Hon. Curator of the Beautifying Society. He is also a member of the Domains Board which controls the Botanic Garden. Dr. Cockayne is a busy man; he served on the Royal Commission on Forestry, 1913, and on the Pastoral Runs Commission, 1919, also on the commission arranged by the Trustees of the Cawthron Trust, 1918, which led to the founding of the Cawthron Institute for Scientific Research. He is a past-president of the New Zealand Institute and was for some years hon. editor of the *Transactions* of that body. In addition, he has taken an active part in all matters connected with the preservation of the indigenous fauna and flora of New Zealand, and at present is concerned in a scheme for the advancement of horticultural education in New Zealand, and the granting of a diploma by the Institute of Horticulture. He is the author of *New Zealand Plants and their Story*, of which the third edition is now being printed, and *The Vegetation of New Zealand*. His publications altogether number 134 and several more are in the press. They deal with ecology, ecological taxomony, experimental morphology and evolution. Dr. Cockayne has produced elaborate reports for the Government of New Zealand, copiously illustrated by photographs, taken by himself, of Kauri forest, Nothofagus forest, Dune vegetation and reclamation, and the vegetation and floras of the Tongariro National Park and Stewart Island. He considers his most important work from the horticultural standpoint is that now being done in conjunction with Mr. H. H. Allan in showing how great is the number of ready-made garden plants amongst the innumerable wild plants of New Zealand, especially those of the genera Acaena, Alsenosmia, Asplenium, Cassinia, Celmisia, Coprosma, Coriaria, Cyathodes, Epilobium, Gaultheria, Gentiana, Gnaphalium, Helichrysum, Hoheria, Hebe, Muehlenbeckia, Nothofagus, Nothopanax, Olearia, Ourisia, Phormium, Pittosporum, Ranunculus and Veronica. His numerous activities may be gathered from the fact that he is a corresponding member of the Botanical Society of Edinburgh, Hon. Life Member of the Christchurch Beautifying Society, Fellow of the Linnean Society, Fellow of the Royal Society, Hector Medallist of the New Zealand Institute, Hutton Medallist of the New Zealand Institute, Fellow of the New Zealand Institute, Hon. Member of the Philosophical Institute of Canterbury, Corresponding Member of the Massachusetts Horticultural Society, Corresponding Member of the Finnish Forestry Society of Helsingfors and Hon. Member of the New Zealand Institute of Horticulture.



DR. L. COCKAYNE, F.R.S.

Forecasting Rain.—Whilst the barometer affords the best means of predicting rain, certain persons, especially those living in the country, seem to have a special flair for sensing the approach of wet weather. Various signs and portents give the clues to these wiseacres, and the possibility of making deductions from certain observations are often of considerable practical value, especially to gardeners and farmers. Some interesting principles in weather forecasting are reprinted from an article by Mr. J. Sanson, entitled "La Prevision du temps," in the *International Review of the Science and Practice of Agriculture*, vol. IV, No. 2. Mr. Sanson states that rain is preceded by exceptional clearness of the air, by better perception of distant sounds (especially those emitted in the direction of rainy winds), by increased twinkling of the stars, by the occurrence of solar and lunar halos (especially the former); by the fact that the clouds are massed in the direction towards which the wind is blowing, and by other indications of minor importance. The various colorations of the sky at dawn and sunset are also important. If the sky is pale or grey in the morning, or orange-red in the evening, fine weather will continue; brilliant colorations at dawn almost always indicate rain. A yellow sky at sunset indicates wind, while when the disc of the sun appears to undergo certain characteristic deformations it is always a sure sign of rain.

Park Gardeners' Outing.—The gardeners employed in the public parks and open spaces at Southend visited Cambridge Botanic Gardens on the occasion of their annual outing on the 2nd inst. The party filled four charabancs and made the journey by road. They were accompanied by the Park Superintendent, Mr. Arthur Keeling, and his brother, Mr. Alfred Keeling, of Chalkwell Park, also Councillor Taylor, a member of the Park's Committee. The party lunched at Cambridge and were joined by Mr. Preston, Curator of the Cambridge Botanic Gardens. After lunch, Mr. Lee, senior gardener at Priory Park presented, on behalf of himself and his fellow employees, a clock to Mr. and Mrs. Arthur Keeling and an umbrella to Mr. Alfred Keeling, for his wife. The visit to the Botanic Gardens was thoroughly enjoyed, despite somewhat unfavourable weather. The return journey was broken at Chelmsford where tea was partaken and this was followed by a smoking concert. The members reached home late in the day after a most enjoyable outing.

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* *A Selected List of Hardy Fruits.* 1926 Edition. Royal Horticultural Society, Vincent Square, Westminster, S.W. 1. Price 6d., post free.

Horticultural Exhibition at Namur.—The last of the cycle of exhibitions held at the historic little Belgian town of Namur took place from the 4th to the 7th September, and was chiefly occupied with Dahlias and fruits. All who have visited the exhibitions have congratulated those responsible for their organisation, a heavy task indeed, but amply rewarded by the outstanding success which has resulted from the efforts put forth. The exhibition was opened by M. Golenvaux, the Burgomaster of the town, who received the judges and bade them welcome in a few kindly and well-chosen phrases. The task of the judges was difficult, but agreeable, owing to the uniformly high standard of the exhibits; but certainly one of the best features of the show was the excellent collection of fruits sent by the Vilvorde College of Horticulture, which was awarded the Grand Diplôme d'Honneur, and also the Materne Cup, with acclamation. Another exhibit of great merit was that staged by the Halle des Producteurs, the large growers' federation, of Brussels, who showed Grapes of extraordinarily high quality, and generously offered them to the Burgomaster for distribution among the local charities. The Dahlia Exhibition was equally interesting, and reflected great credit on the youthful Dahlia Society. The hall was fairy-like in its beauty, and the arrangement excellent; the whole of one end was occupied by the exhibit of the well-known firm of Nagels, of Wilrijk, Antwerp. A pomological congress was held on the 5th and 6th of September, in connection with the exhibition, in the beautiful Communal Hall of Namur, at which the Chair was taken by M. Van Audenaerde, the President of the National Pomological Committee. Among the questions debated were the industrial utilisation of fruits and fruit planting along high roads.

Peruvian Guano.—Mr. R. C. Murphy of the American Museum of Natural History, gives some details of Guano production by the Peruvian cormorant, known as the Guanay, Phalacrocorax bougainvillei, which he describes as the most valuable bird in the world. This species inhabits the coastal waters of the arid western shores of south America approximately 2,400 sea miles in length. The cormorant finds abundant food in the narrow oceanic current known as the Humboldt Current, the principal fish being anchovies. The Guanays move in dense blocks, and when they return to their nesting places after feeding are said to fly in a dense, unbroken stream for four or five hours. A single colony is said to contain about a million birds. On some of the Peruvian islands the density of these cormorants is such that there are three nests to every square metre of surface. Some fifty or so years ago millions of tons of guano were shipped from ports in Peru, and the ancient reserves were almost exhausted. The quantity of guano extracted now annually is about some 90,000 tons of which 70,000 are used in Peru and the rest exported. The collection of guano is regulated by the Peruvian government, and each island is subject to a kind of rotation by which the birds are assured of tranquility. With the new method, colonies are being repopulated and future production is assured, which is seen from the fact that some ten years ago the quantity of guano extracted annually was less than 25,000 tons.

"Flowers and Fishes" in Berlin.—An exhibition of a novel kind was held in Berlin from the 21st to 29th August, entitled "Flowers and Fishes," which was arranged in collaboration by the German Gardening Society and the Aquarium Society, in the Berlin Town Hall. The exhibition aroused much interest and was well attended; but the hall chosen was too small to show the exhibits to the best advantage, the lighting was deficient, and—perhaps in consequence of these disadvantages—the arrangement of the groups left much to be desired. The fact, however, that the venture was a financial success seems to indicate that such exhibitions are liked by the public—at any rate in Berlin—and, given better conditions, would probably receive an even greater welcome.

Appointments for the Ensuing Week.—Monday, September 20: National Chrysanthemum Society's Floral and Executive Committees meet. Tuesday, September 21: Royal Horticultural Society's Committee's meet at Holland Park Hall (three days); Winchester Gardeners' Association's meeting. Saturday, September 25: Wallington and District Horticultural Society's show.

"Gardeners' Chronicle" Seventy-five Years Ago.—*Gardeners' Troubles.*—The following is a verbatim copy of a letter we have just received and which we submit to the consideration of our readers:—"Fearing within a few days I may be in a dilemma, and knowing you to be a friend to our profession, and more particularly when deserving your support, I apply to you. I have just acted as a judge at Maidstone Flower Show, and it may happen my judgment may be called in question, or at any rate, may open persons' eyes, and raise curiosity to gain a sight of my garden. I must, therefore, deal candid with you, and thereby get your candid answer, for my knowledge in the profession is very limited, as will be soon seen in my garden, as the red spider, as they tell me, destroying all my crops, but I have fortunately got a neighbour who has spared me a few Melons; and my greenhouse plants wither and die off as I think from improper soil, and indeed I have not, now it is summer, a single plant in it, or Combs, or Balsams, or Achimeneas. Now do you hold with giving water to bedding plants? for mine are dead before the late showers; and my Roses, dwarfs and standards, look queer (all), say 250 sorts, only because I cut them with shears. And last winter I cut down a Laurel hedge with a saw and hatchet, and now it is horrid ugly, as the saw cuts are all turned black, and the wounds of the hatchet gape open and crack, and many stools dead. In fact, I must say the garden is not like the same place since I first came, and my late mistress, being no more, who did not mind spending £15 or £20, I fear my master will marry again, and I may have then a mistress who knows more about gardening, and lose my place, or some of the curious may now come and call here. Will you please say how, and give instruction, that I may keep it, and avoid exposure, either for myself or the nurseryman who got it for me? I confess I do not know fruits, say Pears, as they seem all alike to me; and what is meant by succulent plants; and please describe colours of flowers, and how to propagate them. I am friendly with many gardeners, and hope to gain knowledge, but I hear behind my back they laugh, and wonder how I have kept my place so long. And our old cook is always grumbling, that she cannot have what vegetables she wants, and yet I get lots of Cabbages given me by my cottagers. I could ask and say much more, but I will again when you have answered this correspondence. *A.*" *Gard. Chron., September* 20, 1851.

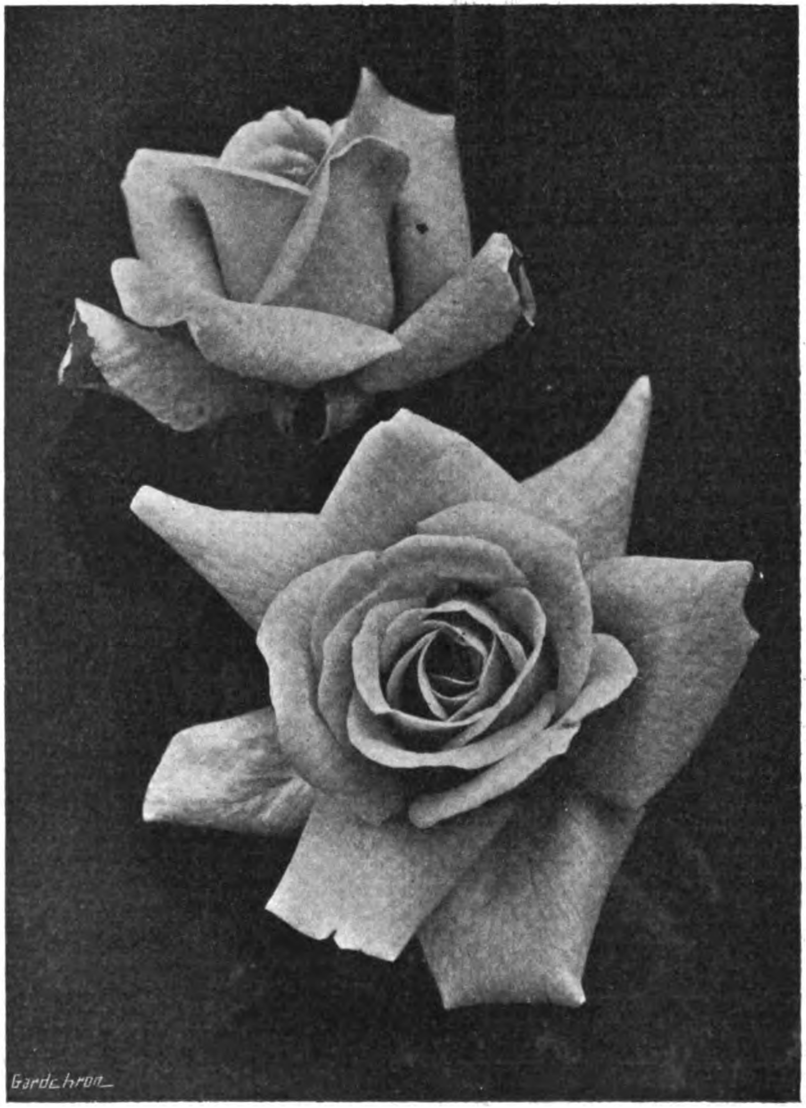

FIG. 107.—ROSE PATIENCE.

(see p. 236.)

The Week's Work.

THE ORCHID HOUSES.

By J. COLLIER, Gardener to SIR JEREMIAH COLMAN, Bart., Gatton Park, Reigate, Surrey.

Masdevallia.—We have now reached the season of the year when members of this interesting genus will need attention. Many plants of the strong-growing species are characterised by flowers of brilliant colour, including M. Veitchiana, M. Harryana, M. amabilis and M. ignea. These mentioned and many others that have recently passed out of bloom are best repotted at this season. They are developing new leaves, and young roots will soon be produced which will quickly become established in the new compost. Healthy specimens that were repotted in February, and others that have sufficient rooting-space for another year should not be disturbed if the soil is in good condition, as they seldom flower freely the first year after root-disturbance. Where the compost has become sour it may be picked out carefully from between the roots, and, after washing the small particles from the drainage, new materials substituted. Large plants that have lost a number of leaves and become bare in their centres should be divided and, after cutting away dead portions, either be potted singly in small pieces or made up again into specimens of a desired size; in doing so it is important that some of the leading growths should point to the centre of the receptacle. These stronger-growing kinds are vigorous-rooting plants requiring plenty of root-room, and are best grown in pots.

Masdevallia O'Brieniana.—Such dwarf-growing kinds as M. O'Brieniana, M. Shuttleworthii and others of this type, succeed in comparatively small pots, or shallow pans; in either case the receptacle should be well-drained. The rooting material may consist of Osmunda fibre and Sphagnum moss cut into short portions, with a few crushed crocks incorporated with it. Pot moderately firmly, and keep the base of the leaves on a level with the rim of the receptacle. For a few weeks after re-potting afford the roots water sparingly. Where a house or division is not set apart for these plants the warmest part of the cool Odontoglossum house should be chosen, preferably on the shady side. The winter-flowering kinds, which include the chaste M. tovarensis should not be potted at this season, and the same remark applies to the members of the Chimaera group.

THE KITCHEN GARDEN.

By F. STREETER, Gardener to LORD LECONFIELD, Petworth Park, Petworth, Sussex.

French Beans.—Special attention should be paid to the crop of French Beans growing in cold frames, as these will prove most valuable for prolonging the supplies after the outdoor crop and Runner Beans are over. Keep the plants supported with thin sticks and the soil moist by giving the roots applications of liquid manure. The lights should be ready for putting on the frames should the glass fall below 40°. Where sufficient heated houses are available it will be found advisable to sow the first batch of pot-grown Beans in seven-inch pots in the following compost: three parts turfy loam, two parts old Mushroom-bed manure and one part sand. Half fill the pots and make the soil moderately firm. Stand the pots closely together until the seeds have germinated and syringe the pots twice daily.

Late Peas.—This has been an unfavourable season for late Peas, the latest sowings have, however, made excellent growth and will continue to provide plenty of pods until well into November, given favourable weather conditions. See that the haulm is kept in an upright position by stretching lines up each side of the rows. Mulch the roots with well-rotted manure to keep the soil moist. Birds are troublesome and must be kept away by nets spread over the whole row. Should there prove to be too many late flowers, thin them slightly and stop the plants to hasten the filling of the pods.

Winter Salads.—Every available frame and pit should be filled with Lettuces and Endive to prolong the salad supplies. Every encouragement should be given the plants to make quick growth. Plant them about twelve inches from the roof-glass and nine inches from plant to plant. These will be found to do much better than those lifted and placed in frames at a later date. Another sowing of a quick-growing and small-hearting variety may be made in frames; these plants should be allowed to grow and finish without being disturbed.

HARDY FRUIT GARDEN.

By W. AUTON, Gardener to VISCOUNT ELVEDEN, Pyrford Court, Woking, Surrey.

Woolly Aphis. — The increase of this pest often goes on unnoticed when the foliage is heavy, and it is necessary to watch for infestations and destroy the aphis before it migrates to the rooting-system. The mealy protection of the insect renders ordinary spraying ineffective and the best remedy is to apply methylated spirit by means of a small brush.

Strawberries.—Remove all runners from the plants as fast as they appear and keep the plantations free from weeds by the constant use of the hoe, bearing in mind that the Strawberry makes roots near the surface, hence the soil should not be stirred too deeply. Every encouragement should be given to the plants to enable them to build up fine fruiting crowns before the end of the season of growth so that they may throw up strong flower-spikes next summer.

Figs.—Outdoor Figs are not very plentiful this year but old trees in favourable positions are carrying satisfactory crops. Figs need particularly careful handling and should be left on the tree until fit to eat. It is sometimes difficult to determine the state of ripeness from colour only, but before ripening the eye opens slightly, and when ready to gather a small drop of fluid is frequently exuded from it. Insufficient ripening of the wood through overcrowding of the shoots is a frequent cause of unfruitfulness in Figs, and if there is any tendency to crowding causing exclusion of light and air, some thinning of the shoots should even be done now.

Filberts and Cobnuts.—There are good crops of nuts in most districts and some of the early varieties are ready to gather. Great care should be taken that they are harvested when perfectly dry, particularly those varieties that remain in the husk, as if stored when moist they will quickly deteriorate.

Mulberries.—Although Mulberries are not much in demand for dessert they are useful for cooking purposes, and where trees exist they will now be providing useful dishes. The fruits drop readily when ripe and may be easily collected by spreading clean mats under the trees and gently tapping the branches.

Grease-banding.—This important work should now be carried out as amongst the several species and varieties of wingless moths which its purpose is to trap are some that become active in early autumn, and if left after this time there is always danger of precocious insects passing up the trunk to the branches of the tree. Use a good quality grease-proof paper of ample width and tie it securely just inside the margin of both edges. Care should be taken that the band is wrapped closely to the trunk or some moths may find their way underneath. Let the grease be a reliable preparation, of which there are several on the market, and any sent out by firms of repute are efficient if handled properly. Many of them retain their adhesive power for an astonishingly long time, but it is well to examine the bands occasionally during the winter as even if the preparation remains perfect the bands may sometimes become so thickly covered with moths as to form a bridge over which others may pass.

THE FLOWER GARDEN.

By F. C. PUDDLE, Gardener to LORD ABERCONWAY Bodnant, Taly-Cafn, North Wales.

Bulb Planting.—One of the chief operations in the flower garden during the next few weeks will be the planting of spring bulbs. Those intended for spring bedding must necessarily wait until the summer bedding is over, but wherever possible bulbs intended for permanent planting and for naturalising should be planted forthwith. If a bulb-planting tool is used for planting the bulbs in turf, care should be taken that sufficient soil is placed around and above each bulb before the turf is replaced, for if an air pocket is left the bulbs will not succeed.

Naturalising Bulbs.—Probably no phase of bulb culture is more picturesque than that of naturalising bulbs in grass and woodland, and for this purpose pride of place must be given to the various types of Narcissus, for they not only add to the beauty of the landscape in spring, but they provide valuable material for house decoration if required. The bulbs should be planted in the open spaces between trees rather than under them, for Narcissi will not flower satisfactorily when grown in dense shade. The native Scilla nutans in its blue and white varieties, and the Spanish Scilla campanulata are perhaps the best plants for the more shaded positions, and they are worthy of extensive planting in wooded places where S. nutans does not grow naturally. On mossy banks and under trees where the grass and undergrowth is short and sparse. Snowdrops, also Anemone blanda, A. apennina, and A. nemorosa, will find a congenial home and brighten the early days of the year, whilst in damper positions the Winter Aconites. Eranthus hyemalis and E. cilicica, will succeed. Fritillaria Meleagris is another good plant for naturalising, but it should not be planted where rabbits abound, as these rodents will eat off the growths as they appear above ground. In well-drained soil and sunny positions, Camassia Cusickii, C. esculenta, C. Leichtlinii, and their varieties are perhaps more effective when growing in the grass than they are in the flower border, and lastly, but by no means least, the beautiful Snowflakes, Leucojum vernum, L. vernum carpathicum and the May-flowering L. aestivum are most charming when massed in semi-shaded positions, and are worthy of extended cultivation. The garden varieties of Tulips are not suitable for naturalising, for they do not succeed well in grass, and to my mind, they strike a discordant note in a sylvan landscape; they are best reserved for the flower garden proper.

Bulbs under Trees.—Most gardens contain a number of trees on lawns, under the shade of which the grass grows very meagrely. These places may be made very bright and pleasing in the spring if they are planted with early-flowering bulbs, such as Crocuses, Snowdrops, Scilla sibirica, Chionodoxas and Erythronium Dens-canis. A colony of any one of these bulbous plants flower and make the principal part of their growth before the trees have developed their leaves. There is one exception, however, and this is the Sycamore, which has such a hungry rooting-system and is so prone to insect pests in summer that any attempt at under cultivation usually ends in failure. An excellent position for a colony of hardy Cyclamen is at the foot of a Beech tree. A bed of soil consisting of leaf-mould and loam, to which lime in some form has been added, should be spread over the roots of the tree to a depth of about four inches. This will form a good rooting-medium for the Cyclamens and an excellent top-dressing for the Beech, for they both prefer a calcareous soil. If a mixed planting is made of the autumn-flowering species C. europaeum and C. neapolitanum, with the spring-flowering C. Coum, C. repandum and C. Atkinsii, the bed will be bright with Cyclamen flowers for most months in the year.

FRUITS UNDER GLASS.

By T. Pateman, Gardener to Sir Charles Nall-Cain, Brocket Hall, Hertfordshire.

Orchard House Trees.—After the fruits have been gathered, any tree that requires repotting should be attended to forthwith; the chief object of completing this work at an early date is to have the roots well-established in the new soil before the fall of the leaf. If the trees are well-furnished with foliage it is surprising the number of new roots that will develop during the next few weeks, provided attention is given to careful watering. It is not always necessary or advisable to place the trees in larger receptacles; their ball of soil at the roots may be reduced, if necessary, by the use of a pointed stick. A slightly richer compost is required for pot trees than for those in borders and should consist of a good fibrous loam with bone-meal, charcoal and lime-rubble added. The compost should be well-worked down the sides of the pots by the use of a thin rammer and made firm about the roots. Syringe the trees frequently on bright days to prevent the leaves from flagging; syringing will also greatly assist the trees in making new roots. Secure the tree to stakes, or the receptacles may be plunged in ashes to about half their depth to prevent them being blown over and damaged by strong winds. Worms will be found troublesome if the pots are stood directly on the ground; a good plan to prevent worms entering through the drainage hole is to stand the receptacles on two bricks placed a few inches apart, and this will also ensure perfect drainage.

Melons in Frames.—Where Melons are growing in frames and their fruits are not yet ripe, every means should be taken to hasten the maturation of the crop. Close the frames as early as possible on all bright days and, should the weather prove wet and cold, partially reline the frames with fresh fermenting materials. When the fruits are nearing the ripening stage a little extra care is needed in watering the roots. The foliage should be kept in as healthy a condition as possible, but at the same time the amount of water should be reduced gradually, or the fruits will be liable to crack. On cold nights cover the frames to conserve as much of the internal warmth as possible.

Cucumbers in Frames.—The same treatment should be extended to Cucumbers growing in frames as in the case of Melons with regard to conserving the internal warmth at night to hasten the development of the crop.

PLANTS UNDER GLASS.

By John Coutts, Assistant Curator, Royal Botanic Gardens, Kew.

Chrysanthemums.—Early-flowering varieties of Chrysanthemums should now be housed in a cool, airy greenhouse, which should be kept well damped for a week or so, and thus gradually accustom the plants to the drier atmospheric conditions that obtain indoors. At the same time care must be exercised in this respect, especially during spells of dull and damp weather, when it may be necessary to use a little fire-heat with ample ventilation. Before housing them, the plants should be well dusted with black sulphur, especially on the under sides of the leaves, or be sprayed with a solution of liver of sulphur at the rate of one ounce to three gallons of water. This treatment should do much towards preventing attacks of mildew after the plants are housed, and when brought indoors the sulphur vaporiser may be used for the same purpose. Plants left out-of-doors should be made secure against high winds, while some arrangements should be made for affording protection for stock it is desired to keep out-of-doors for so long as possible.

Pot Roses.—Roses in pots should now be examined and repotted, if necessary. Plants that do not require repotting should be examined to see that the drainage is perfect, also remove several inches of the top soil and substitute fresh compost. The plants should then be stood in an open position out-of-doors, plunging the pots to their rims in a bed of coal ashes. Many of the dwarf polyantha varieties are excellent for pot culture, and if they are potted from the open ground during October, they will be sufficiently established to give a good display the following spring. They are very easily increased by means of cuttings, and a batch should be propagated every year to maintain a stock for pot culture. The cuttings should be lined out in the open, in a sheltered position, towards the end of October or beginning of November.

Origanum hybridum.—This Origanum, which is commonly known as the Hop Plant, is useful for a display in the greenhouse during August and September—generally a difficult period to maintain a supply of interesting plants. If the Origanums are required for flowering next year a batch of cuttings should be inserted at this time. The cuttings will root readily in a close case in a cool house, and should be grown at all times in perfectly cool conditions. This plant grows freely in any good potting compost.

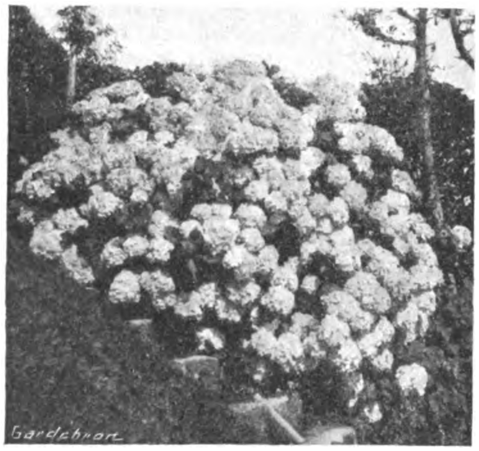

FIG. 108.—SPECIMEN HYDRANGEA AT NITON UNDERCLIFF, ISLE OF WIGHT.
(see p. 236).

Trachelium coeruleum.—This exotic is useful for conservatory decoration, and if seeds are sown now the resulting plants will give a display early next season. Plants raised from seeds this year have proved useful for furnishing the plant stages; these old plants should not be discarded but trimmed back and potted on. Grown on in eight-inch or ten-inch pots they will make fine specimens for furnishing the beds in the conservatory next year. As this plant is nearly hardy, cool greenhouse treatment is all that is necessary at any time.

Darwin Tulips.—These Tulips are very valuable for greenhouse and conservatory decoration; their different shaped flowers and length of flower stem give them an advantage over the early-flowering varieties, especially where they are required for supplying cut blooms. The bulbs should be potted as early as possible, and they should be given larger pots than the earlier-flowering varieties, eight-inch pots being none too large for five or six bulbs. After potting the bulbs stand the pots out-of-doors and cover them with weathered ashes or fibre in the usual way. Darwin Tulips will not submit to so much forcing as the early-flowering varieties, and require careful management in this respect; some of the best varieties for pot cultivation are Baronne de la Tonnage, Bleu Celeste, Carmen, Clara Butt, Electra, Erguste, Farncombe Sanders, Iris, Loveliness, Madame Krelage, Rev. H. Ewbank, Suzon, Wm. Pitt, Sieraad van Flora and William Copland.

FOR NORTHERN GARDENERS.

By A. T. Harrison, Gardener to the Marquis of Ailsa, Culzean Castle, Maybole, Ayrshire.

Carnation Layers.—Layers of Souvenir de la Malmaison Carnations are now well-rooted and should be lifted and repotted. If the knife is used to sever them from the parent plants a week or so before lifting it will be found that little or no check to growth will occur at lifting time. The size of pots used should be determined by the size of the ball of roots, just roomy enough to hold the roots comfortably without crushing, and not so large as to require a great amount of compost to fill them. Four-inch pots are, as a rule, suitable, and the young plants will pass the winter in these quite safely, and will then be ready for transferring to their flowering pots in February. A free, open compost of loam to which crushed lime rubble, or, failing that, plenty of small crocks is added and sufficient sand to render the mixture porous, will be suitable. The same remarks apply to border Carnation layers, which are intended for pot culture. The newly-potted plants should be kept in a frame or cool house and given plenty of air whenever outside conditions permit. Layers of border Carnations which are intended for growing outside, are also ready for severing, and the ground on which they are to be planted should be prepared in readiness for their reception.

Autumn-sown Crops.—The various sowings of vegetables made during August are looking well, and the hoe should be used freely between the rows to check seedling weeds and allow the air to enter the soil freely. The rows of seedlings should be hand-weeded and if, as sometimes happens, the seedlings are too thickly sown, they should be thinned in good time to prevent them becoming drawn and spindly. Thinnings of Cabbages and Cauliflowers may be planted in nursery rows, or, where the winters are severe, they may be pricked into boxes or frames where they may be protected during frosty weather. Lettuces also should be transferred to frames or shelters of some sort, but plenty of air must be admitted to all these subjects in order to keep them sturdy, and prevent them from becoming drawn and soft, only using the protecting materials when the need for doing so arises.

Housing Chrysanthemums.—Houses intended for the reception of late-flowering Chrysanthemums should now be thoroughly cleaned and made ready for them; as these houses may have been utilised for growing Tomatos during the summer, and the latter may have been infested with white fly, two or three fumigations with Cyanogas at intervals of about a week will be necessary to destroy this and other insects. This specific must be used with great care and according to instructions which are given by the makers; other plants that are liable to be damaged by its fumes should be removed for the time being to other quarters. The houses should also be washed thoroughly using a wine-glassful of paraffin mixed with soft soap to each pail of hot water, and hosing the whole house down with force after the washing. When the Chrysanthemums are ready for housing, which may be determined by the condition of the flower-buds, the ventilators should be left fully open night and day for some time in order to accustom the plants to the changed conditions. Any late varieties which are not yet ready for housing should be stood closely together, and preparations made to protect them from frost.

Harvesting Onions.—Onions are nearly fully matured and should be lifted and hung up to ripen. Care is necessary to prevent bruising the bulbs, as any damage done in this way is apparent later; fewer complaints would be heard of large Onions not keeping well, if they were treated in a reasonable manner at harvesting time. Tie them together two and two and sling them over rough poles about three feet clear of the ground, leaving them thus for some weeks, when they may be carried, poles and all, to the shed in which they are to be kept during the winter.

FLOWER GARDEN.

WALLFLOWERS.

FEW plants that are cultivated in gardens to-day have had such a long innings as the common Wallflower (Cheiranthus Cheiri), and probably few are so widely grown, for it takes a prominent part in the spring bedding schemes of large gardens, and is found in almost every cottage garden in the land.

Introduced so long ago as 1573 it enjoys perpetual youth, for its early-flowering habit, bright and varied colours, delicious fragrance and abundance of large flowers appeal to all classes and justify its great popularity. A true perennial in habit and even sub-shrubby if allowed to remain undisturbed for years, it is generally treated as a biennial for garden decorative purposes, and under this system the largest flowers and the most shapely plants are produced.

Wallflowers flourish in any average, well-worked garden soil, except heavy clays and those of a very peaty nature, both of which are too retentive of moisture and should have liberal quantities of opening material worked into the beds when preparing them for planting.

Very rich soils are not to be desired as they encourage luxurious, sappy growth, which is ill-fitted to withstand the severities of the winter, and while open situations are preferable windy positions should be avoided or the plants may suffer just as they are coming into flower.

As Wallflowers usually occupy beds which have been filled with summer-flowering plants, the passing of these control, to some extent, the time of final planting, but this should be done as early in the autumn as possible to enable the plants to become well-established before winter sets in.

The modern varieties are effective bedding plants, and the range of colours has been considerably widened in recent years. The ruby colours, as represented by Ellen Willmott, Ruby and Purple Queen, are general favourites, but for distant effects the yellow shades are the most conspicuous, Cloth of Gold and Golden Monarch being of outstanding merit. Fire King is an intensely vivid orange-scarlet colour, and one of the finest varieties grown, whilst amongst the very deep coloured varieties, Vulcan and Blood Red are very popular. The lighter coloured varieties are not quite so much sought after, but Faerie Queene, with pale citron flowers, is distinct, and makes a delightful bed, while Eastern Queen is an attractive variety, the flowers of which open a light apricot hue and change to rosy-pink. *A. P. C.*

DAHLIA COLTNESS GEM.

IT is doubtful whether any bedding plant has made such rapid strides in point of favour as Dahlia Coltness Gem. Introduced in Scotland a few years ago, it is now to be found in every park and garden of note throughout the country. By itself it is capable of making a wonderfully bright and prolonged show, but I have been particularly interested this year in noting the wide range of plants which may be used with it in a mixed bedding scheme.

At Bournemouth may be seen excellent beds of Coltness Gem edged with Ageratum Little Dorrit and half-standard Fuchsias as dot plants. At Southport, where thousands of this Dahlia are grown, several pleasing associations were seen, the most noteworthy being Coltness Gem with half-standard Heliotropes and an edging of Verbena venosa.

In other parts of the country I have seen it planted with Dimorphotheca aurantiaca, the bright orange flowers of which contrast without clashing with the brilliant scarlet Dahlias. Many other schemes may be found, but by far the most effective I have seen this year is the somewhat unusual arrangement adopted in the grounds of the Hertfordshire Institute of Agriculture at St. Albans. There a large circular bed is filled with Coltness Gem with a few plants of Ricinus cambodgensis, as dot plants, to give height, and the whole edged with Nepeta Mussinii raised from cuttings this spring. The scarlet flowers of the Dahlias, the bronze foliage of the Ricinus, and the lavender-blue flowers and grey foliage of the Nepeta, all contribute to a pleasing and effective colour scheme. *Wolseley Banks.*

ALPINE GARDEN.

SYMPHYANDRA WANNERI.

THIS truly delightful little plant bears pendant, elongated bells of lilac-blue flowers during the summer. The calyx lobes are acuminate, one-half the length of the campanulate corolla; the peduncles one-flowered, both axillary and terminal. The leaves are lanceolate, toothed and pubescent. The stem is terete and pubescent and not more than six inches in height.

This alpine gem is very much like a Campanula and only differs from that genus in its connate anthers. The plant delights in a rich, well-drained, loamy soil and half-shade; it is very pretty when grown in a pan for the embellishment of the alpine house, and is propagated by cuttings or seeds.

Some little protection from excessive winter damp is advisable. S. Wanneri has been referred to Campanula Wanneri. *Ralph E. Arnold.*

THE TALLER ARMERIAS.

OF late years greater attention appears to have been given to the taller Armerias or Thrifts. This is probably due to the introduction of the variety named "Bees' Ruby," an exceedingly fine sort, about two feet high, with very deep, rose-coloured flowers. It is to be met with in many gardens, the attractive name and good colouring rendering it a favourite with many. This Armeria flowers well and good plants with many heads of flowers are very ornamental. It is rather a difficult question with this and the other tall Armerias how to support them in gardens much exposed to the wind, as, if left alone in such gardens, the weight of the heads causes them to fall over in stormy weather and to assume a semi-prostrate habit, the heads often lying in different directions. I have found that the least conspicuous method of supporting the stems is by means of small, twiggy branches, which show very little and hold up the stems well. Another plan followed by some is to insert three thin green sticks in the soil and to connect these by means of green raffia or thin twine. Practically all these taller Thrifts require support of some kind.

Another good, tall Thrift, though not so bright in colour is A. latifolia (Cephalotes), a plant with neat foliage and rose or white flowers on stems about two feet high. It is a good Armeria for the border. A. plantaginea gigantea also grows about two feet in height and has pretty pink flowers which are excellent for cutting. A. plantaginea, the Plantain-leaved Thrift, is very distinct with its handsome, broad foliage and good heads of bright rose-coloured flowers. It is rather shorter than the other tall Thrifts named, as it grows only about one-and-a-half-foot high.

These Thrifts lend themselves readily to increase by division, and all but Bees' Ruby may be raised from seeds.

HYPERICUM REPTANS.

IT was a pleasure to read the appreciative note on p. 186, by *J. N.*, on this most delightful St. John's Wort. It is worthy of all the commendation given to it by your able contributor. It is but rarely, indeed, as he remarks, that we see a really good plant of Hypericum reptans in gardens. I believe this is largely due to the fact that in many places the plant suffers a good deal of injury in winter, and that in these places it is necessary to retain a few cuttings or seedlings. In other gardens it sows itself, and young plants withstand the winter much better than old.

In most cases I attribute the losses to a mild autumn and early winter being followed by severe late frosts, and I have found plants in shade in the early hours of the day less liable to injury, as the frost had disappeared from them before the sun reached them. It is otherwise quite hardy, and is so easily propagated by means of cuttings or seeds that a good stock of plants can soon be obtained.

When well-grown, it is the best of the dwarf St. John's Worts and, as your correspondent suggests, it should be on ground or rock having a gentle slope. Some have claimed that Hypericum fragile is hardier, but I have not found this to be the case, and have lost old plants of this species when H. reptans has survived. *S. Arnott.*

IRIS GARDEN.

INEXPENSIVE BEARDED IRISES.

I AM often asked to make a selection of inexpensive Irises. The following lists are an attempt to do so. In the first list there are no plants which cost more than two shillings, some not more than sixpence or ninepence each. In the second list the plants vary in price from half-a-crown to five shillings. The descriptions are, of necessity, brief, and can claim in most cases only a rough accuracy. I have grown all the varieties in my own garden, and with many of them can claim a long friendship.

FIRST LIST.

La Neige, Innocenza and Mrs. H. Darwin, white; Iris King, Darius and Knysna, yellow; Mrs. F. Stern, Queen of May and Her Majesty, reddish; pallida dalmatica, Lord of June and Prospero, lavender; Ma Mie, white, frilled blue; Rhein Nixe, white and violet purple; almost crimson, with white edge; Alcazar, bluish-violet and deep purple with bronze.

SECOND LIST.

Asia, a mixture of lavender, yellow and purple (though I raised this plant I cannot describe its colouring to my satisfaction); Lieut. A. Williamson, lavender-violet and royal purple; Ambassadeur, the general effect of this flower is brown; Magnifica, very fine but not easy to manage; violet blue and reddish-violet; very large; B. Y. Morrison, pale lavender and purple, with lavender border; Souvenir de Madame Gaudichau, deep violet purple; Sunshine and Flaming Sword, yellow; Ballerine, blue-violet; Corida, pale blue; Eden Philpotts, lavender blue; Harmony, deep purple blue; Lady Charles Allom, rich blue; Camelot, white, edged violet; Kashmir White, white.

I would recommend planting to be done so soon as possible. *G. Yeld, Orleton, Gerrard's Cross. September* 8.

BOG GARDEN.

OURISIA COCCINEA.

WHERE it does well this Chilian plant is a delightful subject, the brilliant scarlet flowers on nine-inch stalks being attractive from early summer to autumn. But it does not appear to be an easy subject to cultivate. In this garden it does moderately well in a fairly rich bed at the margin of the bog, but it does not flower so generously as it does in some places. The best plants I have seen are growing in what is practically a natural moraine, there being plenty of moisture underneath always, but perfect drainage, the stony soil being enriched with peat and leaf-mould. These are in full sun and growing at an altitude of some eight-hundred feet where often frosts are severe.

O. coccinea spreads by means of fleshy rhizomes, thus making a wide carpet of its scalloped, wavy, fresh green leaves. But while it may be easy to get a plant to do this, it does not follow that the flowering will be proportionately free. *A. T. Johnson, Ro Wen, Conway, N. Wales.*

INDOOR PLANTS.

LILIUM LONGIFLORUM.

WHEN the bulbs come to hand they should be potted forthwith, for Lily bulbs soon suffer if left exposed to the air for any considerable length of time.

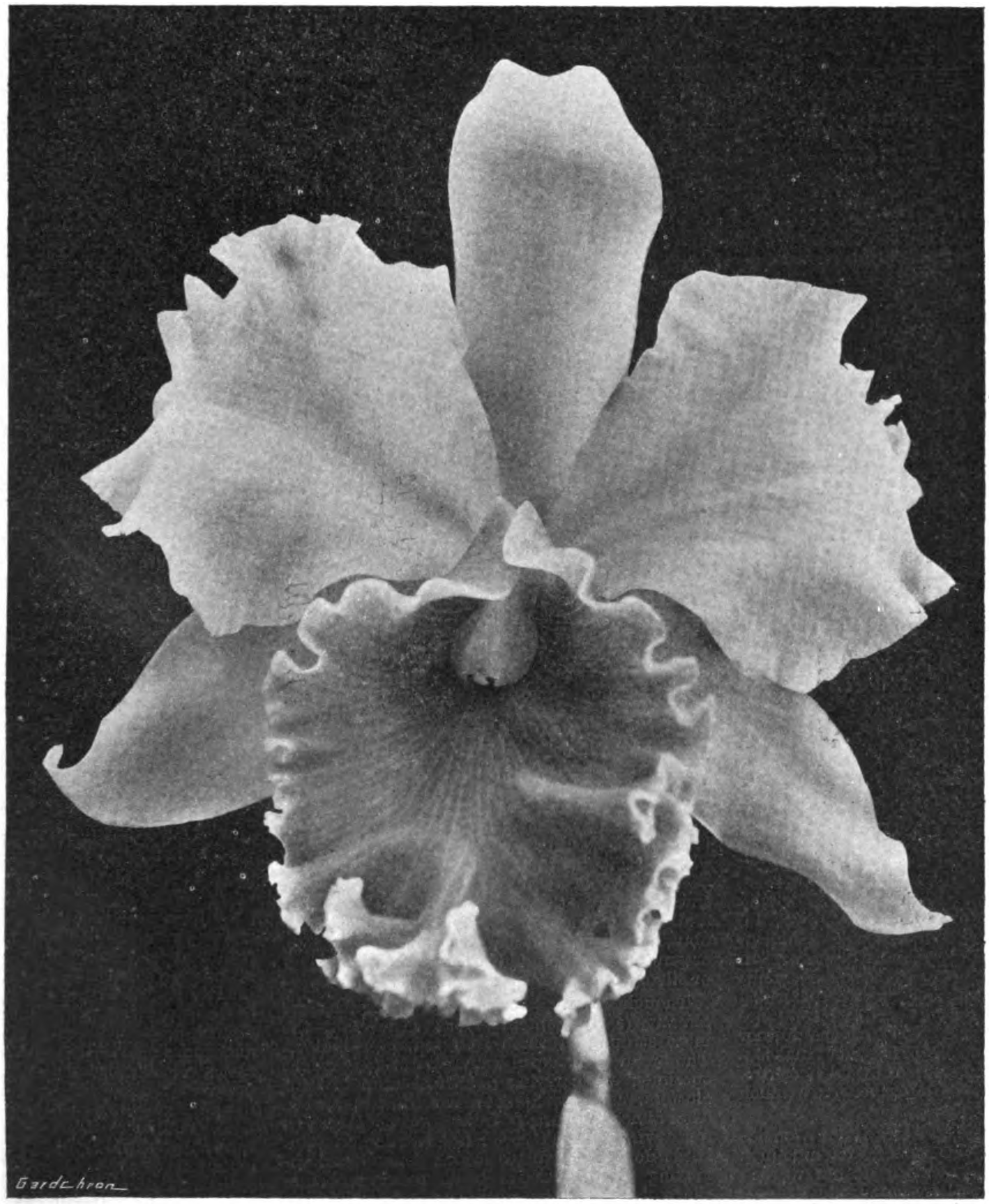

FIG. 109.—BRASSO-LAELIO-CATTLEYA IRMA.

R.H.S. First Class Certificate, September 7. Flowers yellow, orange and cerise. Shown by Baron Bruno Schröder.

(see p. 217).

The bulbs may be placed singly in six-inch pots, or three or four, according to size, in eight-inch pots. Liliums, generally, require and enjoy more room at the roots than is usually afforded them.

As this species is a stem-rooting Lily, the bulbs should be placed sufficiently low in the pots to allow for applying a top-dressing, or the same purpose will be served if the pots are filled completely at the time of potting. After potting them, the bulbs may be stood in a cold frame or in a greenhouse, watering them sparingly until they have made a quantity of roots, and the shoots commence to grow, when they may be introduced to a warm house for forcing purposes. If desired, they may be introduced to a warm house when they are potted, although flowers of the best quality are produced only when the plants are started into growth in cool conditions.

This Lily is very subject to attacks of green-fly which must be guarded against by light fumigations.

SWEET PEAS UNDER GLASS.

SWEET Peas for early flowering may be grown successfully in any span-roofed house of suitable size. The best results are obtained from plants grown in beds, but, failing these, large-sized pots or boxes may be used. A good compost suitable for Sweet Peas is made of three parts fibrous loam and one part of a mixture of wood-ash, lime rubble, and leaf-mould.

The first sowing should be made in the last week in September. Sow the seeds singly in sixty-sized pots, and place the seed-pots in a cold frame. When the pots are filled with roots the plants should be turned out of their receptacles and planted in their permanent quarters. Plant firmly and allow them plenty of room.

Watering the roots should be done with care and the plants grown as hardily as possible by ventilating the house on all favourable occasions, but not during frosty or foggy weather.

When growth commences in the New Year the house may be kept warmer, but until the buds have formed a temperature higher than 50° is not advisable. Syringe the plants in the early mornings during fine weather, until the flower-buds develop. The first buds sometimes fail to open but drop off when coming into flower. This trouble is frequently caused by using water of a lower temperature than that of the house.

Feeding the roots alternately with soot water and a fertiliser in solution will prolong the flowering season. A succession of blooms may be obtained by sowing again in February, raising the seedlings in gentle warmth and transferring them to a cool house when they are established. *S. Bowler.*

NOTES FROM A WELSH GARDEN.

A SHOWERY August has been favourable to many subjects which would otherwise have suffered owing to the poor and shaley nature of the soil. In the rock-garden this is especially noticeable. Here, such choice plants as Dryas octopetala, Geranium Farreri, Gentiana pyrenaica and Campanula garganica hirsuta have broken into quite a prolific second blooming. Armeria Vindictive, perhaps the best and brightest of all the lesser varieties, is also full of flower. Having been cut back in June, Veronica peduncularis is almost hidden beneath the countless pearl-white blossoms of its slender sprays. That excellent little plant, Potentilla formosa var. Willmottiae is gayer than it has been all the summer, which is saying much, and the silver mats of P. nitida, naturally a late bloomer, are arrayed with several of the exquisite pink flowers.

Two trailing plants of the highest merit, viz., Convolvulus mauritanicus and Hypericum reptans, are proving their inestimable value as late-flowering subjects. Samolus repens is another almost prostrate plant which may be relied upon to flower freely in our warm soil at this season, and one cannot pass by that quaint little shrub, Muehlenbeckia nana, whose yellow tufts will soon be followed by the glistening, glass-like berries, which hang far into winter. Yet another prostrate shrublet which has proved quite hardy here, is Myrtus nummularia, its slender, creeping branches of a bright red-brown being furnished with small, deep green leaves. During September this dainty plant brightens-up its somewhat sombre foliage with pretty milk-white stars.

Felicia abyssinica, which is not wholly trustworthy in winter even here, is well worth a place on a dry, sunny ledge, its clear, bluish-lavender flowers being very attractive. An even more beautiful plant of the same genus I saw recently in a neighbour's garden labelled F. rotundifolia. The rays of its flowers are broader and fewer than those of the former and they are a lovely clear blue, which makes a most striking contrast with the golden centre. F. rotundifolia might be described as a much refined Agathaea coelestis.

Chrysopsis villosa var. Rutteri, if not a choice subject, is useful at this season, its nine-inch mass of silvery foliage which drapes a rock bearing a galaxy of yellow, composite flowers. In the same category one might place Teucrium Ackermannii, an almost white-leaved plant of fifteen inches or so with clustered heads of crimson-purple blooms. Helianthemum lunulatum, one of the most charming of its race, is ablaze with its numerous little bright yellow flowers which have such a telling background in the silvered leafage. Though spring is its best time and an autumn crop of bloom quite usual, this delightful little shrub is really never out of flower from May to November, an achievement not shared by many of its race.

Pentstemon cordifolius has done exceptionally well, a large specimen, six feet tall, being heavily laden with its magnificent scarlet, tubular flowers since the end of June. Romneya Coulteri, having had the shoots which bore its earlier blooms cut back, is again making a fine show. Abutilon megopotamicum, a Brazilian shrub well-known among indoor subjects, is on its trial here; a young specimen against a west wall has successfully come through one or two severe winters, and it is now hung with its quaint-looking flowers whose inverted cups of yellow are canopied by a red calyx. Another wall-subject which always attracts much admiration is Maurandia Barclayana. A few plants of this pretty annual will, if given a wire-netting support, densely cover a considerable space to a height of six feet or more, and from about midsummer to the first frosts its bright green foliage will be adorned by a mass of blossom. The flowers are large, about the size and shape of those of a hybrid Pentstemon and of a rich violet, but there are several other colours.

Zauschneria californica var. splendens, which has taken possession of several feet of a low, dry, retaining wall, is breaking into bloom, its scarlet flowers having a most effective setting in the soft, silvery-green foliage. Hard by is a shrub of Cistus recognitus, or that which is usually sent out by the trade under the name. This Cistus remains longer in flower here than any other of the larger, white-flowered kinds. It is presumably akin to C. Loretii, but the blooms are rather larger and open flatter than those of the latter; they are produced singly and in clusters and while the crimson blotch is much fainter and smaller than in C. Loretii, the yellow basal zone is more pronounced. The aromatic odour which emanates from the foliage of this shrub on moist autumn evenings has a distinct resemblance to that of Lippia citriodora (Aloysia citriodora), Lemon-scented Verbena, and this I have not detected in any other Cistus.

Among the shrubby Hypericums, H. aureum is very distinct.. My solitary specimen, now about two feet in height, is a compact, neatly-rounded little bush standing on a single stem. The leaves are oblong and of a curiously fresh, blue-green colour. Just clear of this foliage the blossoms are produced in upright clusters, each yellow flower being about one-and-a-half inch across, with a very prominent brush of stamens. H. chinense, growing close by, does not do nearly so well, the winter always trying it severely. H. patulum var. Henryi, a very handsome shrub, is still full of blossom though the type specimen has ceased flowering, and another good late bloomer in this genus is H. balearicum. This is a pretty shrub even in winter, the glossy, dark green of the leaves contrasting with the paler, almost yellow, tint of their wavy margins and the younger wood. Only one other grouping of shrubs can rival these Hypericums at this season, and that is the Potentillas which, with their abundant flowers in various shades of yellow, cream and white, and their attractive green or silvery foliage, are very delightful.

Though many berry-bearing shrubs are already (early September) at their best, the most striking of these is Cotoneaster bullata. The broad, fan-shaped branches of an eight-foot specimen are carrying a profuse crop of fruit clusters, each being some two inches across. The almost spherical fruits are as large as marrowfat Peas and a brilliant glistening crimson. Birds do not seem to touch these luscious-looking morsels, which begin to ripen before the end of August, and the colour display is rendered the more gorgeous by the glowing orange tints assumed by the large leaves.

Another singularly beautiful Cotoneaster, especially at this season, is C. Dielsiana. This species, which grows to about eight feet, is one of the most elegant of the genus, the long, slender branches arching in a most graceful manner. The grey-green foliage being somewhat sparse, rather tends to emphasise the beautiful contour of the growths, and for the same reason the pink flowers of June and the scarlet fruit bunches of September are rendered the more conspicuous. To fully realise the charm of C. Dielsiana it should be grown alone where it can develop its true character unhampered by neighbours. *A. T. Johnson, Ro Wen, N. Wales.*

MESEMBRYANTHEMUM.

(*Continued from p.* 213).

XI.—PUNCTILLARIA, N. E. BR.

3. P. compacta, N. E. Br.—Leaves about two pairs to a growth, spreading, slightly recurved at the apex, 1½–3 inches long, 4–6 lines broad and thick at the base, dilated to 5–8 lines broad and 5–7 lines thick below the apex, the basal part flat on the upper side and rounded on the back, and the upper part concavely channelled on the upper side and bluntly keeled on the back, tapering from 6-9 lines below the apex to an acute point; surface glabrous, dull green or brownish-green, with conspicuous, slightly prominent dots, slightly shining, slightly glaucous on the young leaves, scarcely so on the older ones. Flower subsessile or on a short pedicel 3–4 lines long, with a pair of bracts at its base. Calyx subequally 6-lobed, prominently dotted: ovary part hemispherical: lobes about 4 lines long, four of them with membranous margins. Corolla 2 inches or more in diameter, opening in the morning, scentless: petals in about 3 series, 12–13 lines long, ½–¾ line broad, linear, acute, yellow, passing into white at the base. Stamens very numerous, erect, about 4 lines long; filaments yellow; anthers of a paler yellow. Stigmas about 16, erect, subulate, as long as the stamens, greenish-yellow.

Mesembryanthemum compactum, Ait. *Hort. Kew*, ed. 1, vol. II, p. 19 (1789); Haw. *Synop. Pl. Succ.* p. 211. M. nobile, Haw. in *Phil. Mag.*, 1823, p. 381; Salm Dyck, *Mesemb.* §4, f. 1; Sonder in *Fl. Cap.*, vol. II, p. 396; Berger, *Mesemb.*, p. 264 and 263, f. 56, which is copied from that of Salm Dyck. M. magnipunctatum var. affine, Haw. *Rev. Pl. Succ.*, p. 87.

South Africa: precise locality unknown.

This species has been long cultivated in gardens as Mesembryanthemum nobile, and is correctly so named, but it appears to be also undoubtedly the M. compactum, Aiton, and as the latter name is much the older it must take precedence and therefore I have here restored it. Haworth states that he never saw this species, and placed it under his section Rostrata (which I have separated as a genus—Cheiridopsis), but in this he was undoubtedly wrong.

4. **P. optata, N. E. Br.** Nearly stemless, branching at the base and forming a clump 2–2½ inches high. Leaves 2–4 to a growth, more or less spreading, equal, 1–2 inches long, 3½–6 lines broad and 3½–5½ lines thick, and of nearly equal breadth and thickness throughout, flat or slightly concave on the upper side, with obtuse or rounded edges, very convex and bluntly keeled on the back, obtuse or subacute at the apex, smooth, glabrous, dull brownish, reddish-grey or dark grey-green tinted with dull purple, faintly glaucous, thickly but rather inconspicuously dotted with darker green. Flower solitary, terminal, sessile, with a pair of bracts 2½–5 lines long at its base. Calyx 5–6-lobed, smooth, glabrous: tube above the ovary 2–3 lines long, cup-shaped: lobes reflexed or revolute, 2-4 lines long, ovate, obtuse, brownish, some with membranous white margins. Corolla 1¼–1½ inch in diameter, apparently remaining expanded day and night irrespective of cloud or sunshine if the temperature is warm enough and lasting 5–6 days, scentless; petals 50–60, free, in about 2 series, lax, arising from the top of the calyx-tube, spreading rather widely in the morning, becoming very revolute late in the afternoon and evening, 9–12 lines long, ½–¾ line broad, linear or cuneately linear, often obtusely toothed at the apex, bright yellow fading into white at the base, paler on the back. Stamens numerous, erect, at first collected into a cylindric or slightly conical, dense bundle about 3 lines long, finally with some of the outer stamens separating from the bundle and standing erect or spreading loosely around it; filaments white; anthers deep yellow; no staminodes. Style none; stigmas 11–15, arising from the conical top of

the ovary, finally about as long as the stamens (1½-3 lines long), filiform, erect, curved or contorted at the tips, pale yellowish. Ovary conical at the top, 11-15 celled; placentas on the outer wall of the cells and also partly on the central axis. Capsule subglobose, 6-7 lines in diameter when closed, with 11-15 valves and cells; valves 3-4 lines long and about 1 line broad at the base, very acute, brown, with a very prominent membranous crest-like keel down the middle of the inner face: expanding-keels separate, parallel, stout, dark brown, about half as long as the valve and then produced into free, awn-like points with a membranous tapering wing on their outer margin and considerably shorter than the valve; cells as for the genus, each with its opening nearly closed by a compressed dark brown tubercle. Seeds ⅔-¾-line in diameter, compressed, ovoid or suborbicular in outline, with a conspicuous nipple at one end, very minutely tuberculate under a lens, dark brown.

Mesembryanthemum optatum, N. E. Br., in *Journ. Linn. Soc.*, v. XLV, p. 71 (1920).

Oudtshoorn Division: Bank Hoogte, Mrs. Wiggett 3! Marloth 6341!

A plant of this species flowered at Kew in November, 1917, but its place of origin was unknown, recently, however, it has again been introduced by Mrs. J. Wiggett, who discovered it at the locality mentioned.

The flowers of this species, although apparently expanded all day, open more widely late in the afternoon and evening than in the morning, and are sensitive to temperature. A coloured drawing of it that I have made (and which I hope to publish) represents the corolla as seen expanded in the morning, but in the evening of the same day the central part had opened more widely and the petals were very much rolled back, so that the calyx was entirely concealed. One afternoon, upon being removed from the greenhouse to a room of cooler temperature, the flower closed up, but during the evening when the room had become much warmer, it expanded again. So that it is evidently more sensitive to temperature than to sunlight.

5. P. Roodiae, N. E. Br. (Fig. 110).—Plant stemless, forming clumps 1½-2 inches high. Each growth with two unequal or subequal leaves united for 6-9 lines at their base, the free part usually, but not always, longer than broad, 1-2¼ inches long, 8-14 lines broad and 6-10 lines thick, ascending-spreading, deltoid or deltoid-oblong in outline viewed from above, flat on the upper side, rounded or obliquely and very obtusely keeled on the back, very obtuse at the apex, entire, dull greyish-green or brownish in nature, becoming greener under cultivation, thickly covered with slightly prominent dots that are not much darker in colour and therefore not so very conspicuous. Flowers not seen, but from the photograph reproduced in Fig, 110, solitary and terminal, sessile (but the fruit has a stalk about an inch long) bracteate. Corolla about 2 inches in diameter, expanding, according to Mr. Leslie, at 11.30 a.m. and closing about 5.30 p.m.; petals in 1-2 series, lax, recurved-spreading, 9-12 lines long, about ½-line broad, cuneately linear, obtuse or toothed at the apex, yellow. Stamens numerous, erect, apparently loose and arranged somewhat in a ring. Stigmas not seen. Capsule 4-5 lines in diameter when closed, shortly obconic, flattened at the top, grey, 7-8 lines in diameter when expanded, with 9-10 valves and cells; valves spreading or recurved; expanding-keels closely parellel or contiguous at the basal part, then diverging and ending in fine awn-like points a little shorter than the valves and with membranous marginal wings up to the base of the awns, the whole interior of the capsule of a light brown colour; cells roofed with semi-transparent, membranous, flexible cell-wings and with a small, rudimentary hard pallid tubercle at the opening; placentas on the outer wall and base of the central axis. Seeds about 6-12 in a cell, about ⅓-line long, ovoid, with a nipple at one end, smooth, brown.

Van Rhynsdorp Division: near Van Rhynsdorp, Mrs. E. Rood!

This plant does not quite conform to the generic characters of Punctillaria, and may when better known, prove to be a distinct genus. It differs by its leaves being mostly unequal and united at the base for a much greater length than they are in the other species of Punctillaria, by the cell-wings of the capsule being membranous and flexible instead of stiff, and by the rudimentary nature of the tubercle at the mouth of the cells. Possibly the stigmas may differ also, but these I have not seen. In other general characters I find nothing to separate it, and therefore place it under this genus for the present.

N.B.—I would here call attention to Mesembryanthemum carinans, Haw., which seems allied to the genus Punctillaria but probably does not belong to that genus. It is at present quite an unknown plant except from the figure of the type plant preserved at Kew; for the species described by Sonder and by Berger as being M. carinans is not at all like the true plant, as I have previously stated in the *Journal of the Linnean Society*, vol. XLV, p. 66, where I have described Berger's plant under the name of M. granulatum, N. E. Br. There are also two or three other species distinct from M. granulatum that are named by South African botanists as being M. carinans, which are likewise quite different from the true M. carinans. I therefore here give a description of this species compiled from the drawing at Kew and including the characters given by Haworth. As the flowers are unknown its true generic position cannot at present be determined, but as it bears a somewhat general resemblance to Punctillaria compacta (except that the tips of the leaves curve upwards instead of recurve and are more compressed), I think it best to call attention to it here.

Mesembryanthemum carinans, Haw., *Rev. Pl. Succ.*, p. 90 (1821).—Plant stemless, forming clumps and having somewhat the general aspect of Punctillaria compacta, but with the leaves compressed and dilated at the keel near the apex. Leaves apparently 3-4 pairs to a growth, at first ascending, becoming widely spreading and curved upwards at the tips, 1¾-3½ inches long, 4-7 lines broad at the very base, but rather abruptly contracted to 3-4½ lines broad a little above the base, thence with the upper side gradually tapering to an acute apex, semi-terete and 3-4 lines thick at the basal part, compressed and dilated at the keel of one leaf of each pair to 3½-6 lines thick, the other leaf of each pair scarcely or not at all dilated there and acute in side view, flat or faintly concave on the upper side, rounded on the back at the base, keeled at the upper part; surface glabrous, slightly rough, glaucous-green, covered with numerous, conspicuous, slightly prominent darker green dots, which the artist seems to have indicated as being more prominent on the keel or that the keel is somewhat scabrid. Flowers unknown.

South Africa.

The above is all the information that can at present be given concerning this plant. *N. E. Brown.*

(*To be continued.*)

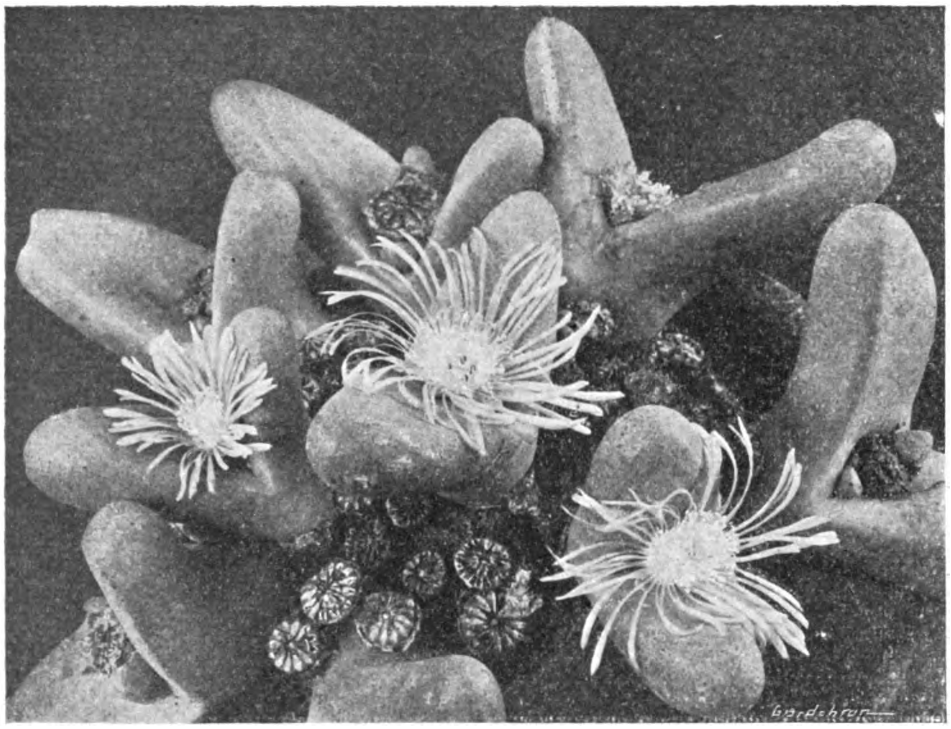

FIG. 110.—PUNCTILLARIA ROODIAE, N. E. BR.

WOODLAND GARDEN.

MONTBRETIAS IN WOODLAND.

Grouped in the woodland, any good varieties of Montbretia are extremely effective. Their tufts of pale green leaves are cheerful and ornamental all the summer, and from early August onwards to the first frost the flaming orange, yellow and vermilion of their elegant sprays are in precisely the right note to harmonise with the autumn tints. Moreover, I have found that clumps of Montbretia growing among native herbage, such as creeping Ivy, will flower and grow indefinitely without division and replanting. There are colonies here which have never been disturbed for over fifteen years, yet they are to-day as healthy and as full of flower as one could desire.

The dead leaves are cut away in winter and that is the only attention they ever get. In many places the Ivy which covers the ground where they grow is about nine inches in depth, but this does not in the least affect the well-being of the plants. It probably tends to check undue spreading, which in Montbretias in the flower garden is sometimes troublesome. *J., N. Wales.*

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VIOLA GRACILIS.

I WAS recently asked to state what were the characteristics of the true Viola gracilis, by a friend who was in doubt as to whether he possessed it or not. So many garden hybrids have been produced in recent years—crosses of V. gracilis with V. alpestris, V. cornuta or V. Munbyana—that it is becoming difficult to procure the original species, or at least to make sure that it is the original species that one has procured.

In 1917, Farrer thought that the garden hybrids had utterly lost the freakish, elfin loveliness of V. gracilis; and since the war a new hybrid has been of almost yearly occurrence. I do not know that there is in reality much human design about these matters: but gracilis hybrids recently sent out do go to show that the ideal of roundness and fatness in Violas has remained as an inheritance from the Pansy and Viola vogue of last century. Whether Dream or Golden Wave or Grandeur should share the condemnation that Farrer meted out to Purple Robe, I am a little doubtful but one cannot expect every gardener's duckling to be a swan.

The unravelling of the confusion which has enveloped this Viola for a century has some of the glamour of the detective drama. A mere recital of botanical characteristics fails, except to a few who can translate a technical analysis into a mental picture, to call up a lifelike image of a plant. But it is at least useful as a *memoria technica*. V. gracilis is characterised by being shortly hairy in all its parts, especially on the leaves and stipules; by its oblong leaves, which are gradually attenuated into the leaf petiole (though they vary into ovate or nearly round forms, in which the attenuation into the petiole becomes more abrupt); by the leaves being obtuse and crenate; by the stipules being divided pinnately into a leaf-like, crenate, terminal segment and lateral segments, varying from linear to oblong, which may be one, two or three on the inner side (that is, the side adjacent to the leaf petiole) and two, three or four on the outer side; by the sepals being lanceolate to oblong, acute, nearly entire, and having broad appendices; and by the spur being twice as long as the appendices.

But V. gracilis, as originally found by Sibthorp, in 1794, on Mt. Olympus, and described in 1806 by Sibthorp and Smith, has tripartite, not multipartite stipules. The tripartite form, to judge, for instance, from the last Chelsea Show, is in general cultivation. Sibthorp found his plants on the summit of the mountain (8,200 feet) in summer, at a period of the year when the lower or subalpine Violas would be in seed. About 1843, Grisebach visited Mt. Olympus early in the year and collected a Viola at the lower levels, which he named V. tricolor var. olympica. Again, about 1867, Boissier visited the mountain and found only the form with multipartite stipules, which, following Grisebach, he described as V. olympica.

At this point we have reached the solution of Farrer's description of V. olympica in *The English Rock Garden*. There it is stated to have "a neat, small habit in the way of *V. rothomagensis*, differing from *V. tricolor* in being perennial," with the "flowers of the Heartsease, with the spur twice as long as in *V. rothomagensis*. Its home is in the pine region of the Bithynian Olympus." A description evidently based on that of Boissier in the *Flora Orientalis*.

There is being offered by one nursery to-day a Viola under the name of V. olympica which seems to me to be near V. rothomagensis, probably a rothomagensis × tricolor cross, which is very similar to that which Kew grows under the name of V. rothomagensis.

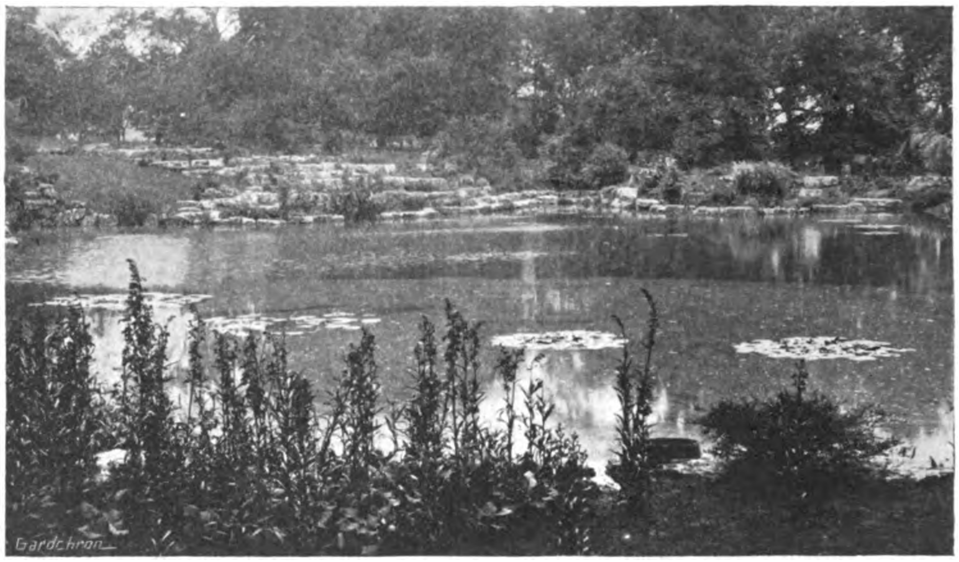

FIG. 111.—MICHAELSTOWE HALL, HARWICH: THE ROCK AND WATER GARDENS.

(see p. 232.)

There are then alpine and subalpine forms of V. gracilis, and tripartite- and multipartite-stipuled forms. The alpine form may be exclusively tripartite and the subalpine form multipartite, or more probably there are transitional forms. However that may be, V. gracilis and V. olympica are synonymous.

There is still another form which was given specific rank by Boissier and Heldreich as V. calycina. This was collected by Heldreich in Pisidia in 1845, by others in other parts of Asia Minor, and by Aucher-Eloy on Mt. Olympus. As its name implies, this Viola is distinguished by its broader and blunter sepals (among other things), but Becker has shown that these characteristics are neither constant nor individual to this plant, but are shared by V. gracilis, so that the only finally distinctive mark which V. calycina possesses is its yellow blossoms—a variation insufficient to constitute a separate species. V. calycina thus becomes a sub-species of V. gracilis. In *The English Rock Garden*, Farrer described V. calycina as "a diminished version of *V. olympica* from the meadows of Pisidia, differing in the size no less than in the broad, blunt lobes of the calyx." A description again apparently based on Boissier. Becker has shown that the size of the blossoms is not necessarily smaller than in some other forms of V. gracilis.

I do not know if this sub-species, calycina, is in cultivation or not; but it may be the form that Farrer had unconsciously in mind when he wrote that seed of V. gracilis "sometimes yields a creamy-citron-coloured form, but much more often proves the influence of other species in the garden on the impressionable nature of the Gracious Pansy." There is offered in lists, though rarely, a V. gracilis sulphurea which is described as a sulphur-yellow form with the true habit of the type but with rather small flowers.

The hoary legend that V. gracilis is the "Greek Violet" still prevails in most catalogues. It is neither Greek nor a Violet. In one list alone it is stated to come from Macedonia, which is correct, but it is an infrequent denizen of Macedonia, being found only on one mountain therein. The Kew *Handlist*, 1925, gives the provenance as "Greece, etc.," which is correct only in so far as Macedonia, or part of it, has become Greek since the war. In the volume on *Pansies, Violas and Violets*, in the "Present-Day Gardening" series, published just before the war, V. gracilis is given as from Greece and it is stated that "the variety Valderia (heterophylla) is a charming variety from the Tyrol." There appears to be a close connection between this last statement and the entry in the Kew *Handlist* of "V. gracilis var. valderia" taken in conjunction with the further entry, "V. heterophylla Bertol. See gracilis var. valderia."

So far, the only known homes of V. gracilis are as follow:—

In Central Macedonia: Mt. Orlova-Voda (Mt. Peristeri);

In Asia Minor: Mt. Olympus (near Brusa, on the railway line running south from Mudania on the Sea of Marmora).

It has also recently been recorded on two mountains near the frontier of Albania and Montenegro.

The sub-species calycina has been found on Mt. Olympus, and in various places across the northern confines of Asia Minor, where the mountains overlook the Black Sea, as on peaks near Kastamuni and Amasia, and eastwards into the Pontus Range.

It appears, therefore, exceedingly probable that the species as a whole has its home along the fortieth parallel of latitude, or just north thereof, from near the Adriatic to the eastern end of the Black Sea, beginning sporadically in the western area and becoming more frequent from the Sea of Marmora eastwards.

The Mt. Olympus which is the *locus classicus* of V. gracilis should not be confused with the

Thessalian Mt. Olympus that overlooks Salonika nor with the Olympus of Cyprus which is Mt. Troödos, nor with the Olympus of Crete which is Mt. Ida, nor yet with the Olympus (or Ida) mountains that overlook ancient Troy or the Island of Rhodes. To the ancient Greeks Olympus was the dwelling-place of the high gods, and every high mountain was a dwelling-place of the high gods, whence every high mountain seems to have been known as Olympus (just as in northern Italy to-day the name of every second mountain is Monte Maggiore)—much to the confusion of botanists, for all these Mts. Olympus or Mts. Ida are the homes not merely of the high gods but of equally pre-eminent flowers.

How then arose the allegation that V. gracilis was native to Greece? It is easy to believe that gardeners have confused the Mt. Olympus of Thessaly with the Mt. Olympus of Bithynia. It is less easy to understand how the classical botanists confused two plants so wholly distinct.

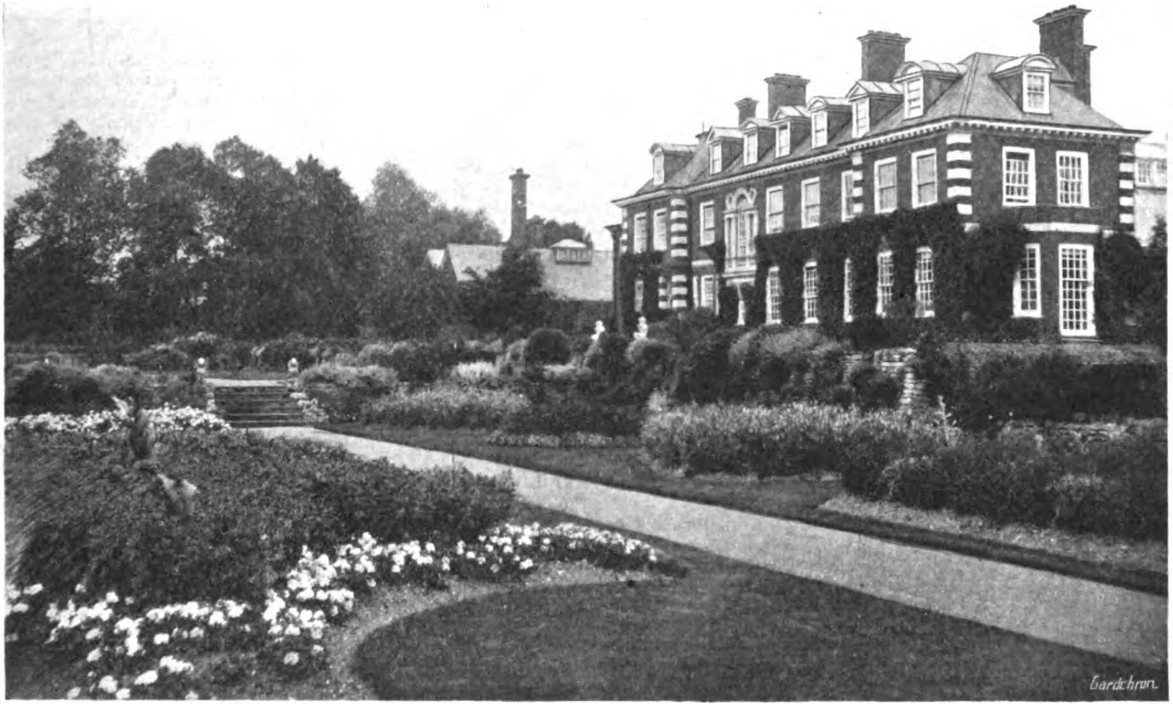

FIG. 112.—MICHAELSTOWE HALL, HARWICH: TERRACE GARDENS AND DRY WALL.
(see p. 232).

For the explanation we must go back again to Boissier.

There is a large group of Violas, akin to V. calcarata, which is distributed throughout southern Europe from the Ligurian Alps overlooking the Italian Riviera to southern Italy, Sicily and Greece. To the Violas of this group Bertoloni in 1810 gave the name of V. heterophylla. Boissier, in his *Flora Orientalis*, was aware of this plant in its Greek and South Italian forms; and, as we have seen, not having found Sibthorp's gracilis on Mt. Olympus, concluded that the plant of South Italy and Greece was the V. gracilis published by Sibthorp and Smith. Thus, in the *Flora Orientalis*, he definitely makes V. heterophylla synonymous with V. gracilis, and adopts the earlier name (gracilis) as the name of the Greek species. Having visited Mt. Olympus early in the year, and having found there only the sub-alpine V. olympica, he remained unconscious of the existence of Sibthorp's V. gracilis on the summit of the mountain.

The tale of confusion is not yet complete. In 1835, in the second volume of the *Flora Italica*, Bertoloni elaborated his original V. heterophylla into two varieties. The first variety has remained the type of the widespread V. heterophylla. The second variety has been relegated to its correct place in the hierarchy by Burnat, and is now known as V. Dubyana. The two varieties belong to distinct groups. the first to the calcarata group, the second to the cornuta group. Unfortunately about 1839, Reichenbach, in the *Flora Germanica*, associated V. heterophylla with both V. valderia and V. gracilis; and even so late as 1892 we find Burnat writing: "The first variety of V. heterophylla var., Bert, has been made synonymous wrongly by Reichenbach with V. valderia. Very akin to V. gracilis, Sibthorp and Smith, from which it does not appear to us specifically distinct (compare Boissier, *Fl. Or.* I, 463) . . . ." There are, in fact, certain resemblances between V. valderia and V. Dubyana, but the differences are so great as to cause them to be placed in different groups, the former in the cenisia group, the latter in the cornuta group. V. Dubyana comes from the Tyrol, or at least that part of the pre-war Tyrol which is now the southern part of the Italian Trentino. From all of which it appears that V. gracilis was connected by a line through the two varieties of Bertoloni's heterophylla with V. valderia. Whence the V. gracilis var. valderia of the Kew *Handlist*, and the statement in the "Present Day Gardening" series that "The variety Valderia (heterophylla) is a charming variety from the Tyrol."

In Farrer's delightful book on *The Rock Garden*, also published in the "Present-Day Gardening" series, there is a coloured plate of V. gracilis. Beautiful as the plate is, I do not think that the colour of the flowers is quite true to either V. gracilis or V. Dubyana; but if anyone compares the botanical characteristics of the true V. gracilis as summarised at the beginning of this article with the leaves, stipule and spur as shown in the plate, mental fog will surely arise. If, however, the plate in *The Rock Garden* is compared with the photograph of V. Dubyana opposite page 456 of the second volume of *The English Rock Garden*, it will be seen that coloured plate and photograph represent the same Viola, viz., V. Dubyana.

V. gracilis having once been dissociated from what Farrer calls "the imposters" of Southern Italy and Greece—as if the plants had imposed on the credulity of botanists, instead of the incredulity of botanists having caused the plants to be misrepresented—it became necessary to explain what these Greek and Italian changelings were.

For the Greek species this was done by Halácsy, who in the first volume (1901) of the *Prodromus Florae Graecae* gives V. gracilis, S. and S., as native to Greece, but in the Supplement (1908) substitutes the name V. graeca, and states definitely that V. gracilis does not exist in Greece. Becker meanwhile linked V. graeca with the widespread V. heterophylla, and the Greek species should now be known as V. heterophylla sub-sp. graeca. It is not in cultivation.

An easy way was taken in the first instance with the Southern Italian species. It was simply named the "false gracilis," or, in botanical Latin, pseudogracilis—which is as enlightening as to say "We know it is not gracilis, but we don't know what it is." Again, however, it was a case of too many cooks. There is the V. pseudogracilis of Strobl (1877), a species that extends from the neighbourhood of Naples southwards to the Nebrode mountains in Sicily, and which is now to be known as V. nebrodensis sub-sp. pseudogracilis. I do not think this is in cultivation. There is also the V. pseudogracilis of Huter, Porta and Rigo (1877), which comes from Calabria (the "toe" of Italy) and reaches across the Straits to the hills around Messina. This is the V. pseudogracilis of *The English Rock Garden*. It is in cultivation in England, is an attractive Viola, and should now be known as V. heterophylla sub-sp. messanensis. *E. Enever Todd, Lt.-Col.*

MICHAELSTOWE HALL, HARWICH.

THE gardens of Michaelstowe Hall, the Essex seat of R. C. Abdy, Esq., are amongst the finest in that part of the country. The mansion is a substantially built red-brick structure in the Georgian style of architecture, and, situated in an elevated position, it overlooks Harwich and the sea. Being only a few miles from the coast the climate is tempered by the sea air and many plants which do well in these gardens would not succeed further inland. The estate was purchased in 1920 by the present owner who has extended the gardens and developed them on modern lines.

The entrance to the estate is through lodge gates of massive iron structure surmounted by six lions, situated on the main road from London to Harwich. A winding drive of about five hundred yards leads to the mansion. Prior to 1920, the drive consisted simply of a road cut through this part of the park, but it has now been widened to enable a belt of ornamental trees and shrubs to be planted on each side. These plantations have made excellent growth, and with groups of herbaceous perennials in the front, and a well-kept grass verge, combine to make the carriage way an attractive feature.

From the front entrance to the mansion a large expanse of lawn permits an unobstructed view towards the main road, while on the flanks extensive shrubberies are planted. In front of the shrubs are well-arranged herbaceous borders, which, at the time of my visit, were giving a rich floral display. Campanulas, Centaureas, Chrysanthemums, Echinops, Gaillardias, Hemerocallis, Lychnis, Pentstemons and Phloxes being particularly fine.

Many interesting plants are well established in sheltered positions on and near the mansion, amongst which I noted Abutilon vitifolium, Clerodendron Fargesii, Ceanothus dentatus, C. Veitchianus, Grevillea sulphurea, G. thyrsoides, Lonicera Hildebrandtii, Solanum crispum and Thladiantha dubia.

On the north side of the mansion the ground slopes towards the park, which is well-wooded and contains some very fine Oaks. Dividing the garden from the park is a sunk fence with a hedge of Lonicera nitida in excellent condition, and the intervening space is laid out in two terraces (Fig. 112) separated by a dry wall which is well furnished with such plants as alpine Phloxes, Helianthemums, Nepeta Mussinii, Alyssums, species of Dianthus, Cerastium and Sedum, while Lavender and Cotton Lavender clothe the top of the wall. An extensive summer bedding scheme is carried out on the terraces, Heliotropes, Zonal and Ivy-leaved Pelargoniums, Calceolarias, Salvias and large-flowered Pentstemons being largely used and planted in massive beds, chiefly in self colours. A few beds were planted with mixed subjects, however, and proved attractive combinations. Amongst these were Salvia Grahami with Salvia leucanthemum; Alonsoa Warscewiczii and Centaurea ragusina; and Salvia patens with Calceolaria amplexicaulis, the last combination being strikingly beautiful.

On the west side of the mansion, reached by a flight of steps from the terraces, is the Rose garden, and the extraordinary vigour of the plants showed they have found an ideal home in the naturally heavy soil. Hybrid Tea varieties are the chief favourites, and amongst those noted were Angele Pernet, Constance Gasson, Covent Garden, Elsie Beckwith, Louise Catherine Breslau, Lieut. Chaure, Souvenir de Clermonde, Souvenir de Claudius Pernet, Souvenir de Georges Pernet, The Queen Alexandra and Ville de Paris.

Not far from the Rose garden, to the west, and partially enclosed by a belt of mature trees, is the rock garden and lake which constitute really the *tour de force* of the place (Fig. 111). The area enclosed within the belt of trees is about two acres in extent and slopes abruptly to the south. The rocks employed are weathered Westmoreland stone of massive dimensions, arranged on the slope with substantial pockets for the reception of plants, while some of the larger pieces, laid singly to form the approaches, have natural pockets which make ideal homes for the smaller-growing subjects. Stone paths and steps intersect the main portion of the rock garden so that the whole area may be explored easily. A stream of water is conducted through a pipe to a point at the top of the rockery, to make a waterfall among and over the stones down into the lake in which Nymphaeas in variety, Pontederia cordata and Richardia aethiopica are planted. Around the lake, Iris Kaempferi, Primula japonica, Lobelia cardinalis and other moisture-loving plants flourish.

The rock garden, although newly constructed, is well furnished and amongst plants growing particularly well I noted Androsace sarmentosa, Achillea argentea, Alyssum saxatile, Aubrietias in variety, Campanula caespitosa, C. garganica, C. pusilla, C. macrostyla, C. rotundifolia, Cotyledon simplicifolia, Crucianella stylosa, Convolvulus mauritanicus, Dianthus in variety, Erodium rosea, Erigeron mucronata, Erythraea diffusa, Globularia cordifolia, Hutchinsia alpina, Hypericum orientale, H. reptans, Lithospermum prostratum, Saxifragas in great variety, Potentilla minima, Sedums in variety, Verbena radicans and V. chamaedrifolia, while planted at the top and overhanging some of the larger stones were such plants as Clematis tangutica, C. grata, Cotoneaster horizontalis, Cistus salvifolius, Teucrium fruticosum, Genista tinctoria, Olearia nummularifolia and Fuchsia corallina. A shrubbery border containing Acer Negundo variegatum, A. palmatum, A. Ginnala, Circis Siliquastrum, Retinospora plumosa aurea and many other kinds, is planted on the higher ground, with openings at intervals giving access to the stone steps leading through the rockery.

The kitchen and fruit gardens are situated on the opposite side of the main road and are of fairly large dimensions. Kitchen garden crops were in a flourishing condition while many young bush Apple trees were bearing their first crop. Plums and Pears are largely grown against walls and fences and were bearing remarkable crops, a low fence covered with cordon Pear trees being a wonderful sight.

The glasshouses are of recent erection and vineries and Peach cases give promise of excellent future crops. Carnations are largely grown and have a house devoted to them. The flowering house was particularly gay at the time of my visit with well-grown plants of Campanula pyramidalis, Zonal Pelargoniums, Begonias, Browallias, Tracheliums, Salpiglossis, etc., while Fuchsias, Schizandra rubra, Abutilon vexillarium, Bignonia grandiflora and Lapagerias furnished the rafters. In the stove were good specimens of Acalyphas, Codiaeums, Dracaenas, Marantas, etc., and the roof was clothed with Cissus discolor, Allamanda Hendersonii, A. Williamsii and Thunbergia grandiflora, the delicate pale blue flowers of the last being borne in rich profusion.

Both Mr. Abdy and his gardener, Mr. Rose, are very enthusiastic, and I gathered that considerable extensions, including the erection of more glasshouses, are contemplated at an early date. *A. P. C.*

TREES AND SHRUBS.

THE IRISH HEATHS.

BOTANISTS only recognise one known species of the Irish or St. Dabeoc's Heath—Daböecia polifolia—a plant probably better known to gardeners as Menziesia polifolia. There are, however, two very distinct types of the species which, as growing, present very different effects to the eye.

The typical D. polifolia is a rather compact, hard-wooded shrub, with lanceolate, sometimes almost linear-lanceolate leaves, silvery beneath, and deep wine-red or white, narrowly urceolate flowers in spikes. There is also a quaint form (var. bicolor) which produces a variety of flowers on the same plant. Purple spikes, white spikes and others of a pretty shade of lilac-pink may be in evidence at the same time, while differently coloured flowers on the same spike occur as well as parti-coloured blossoms. Very richly-coloured forms are also in commerce, some of a very deep maroon colour.

The form known in catalogues as var. globosa is of laxer growth, rather sub-shrubby in habit, with more distinct, softer, generally broader foliage, a looser arrangement of the flowers on the spike and much larger blossoms of more bloated, almost globular form. No wine-red form of this corresponding to the typically coloured polifolia is known to the writer; indeed, the form usually met with is white. This white globose variety may be readily crossed with the typical polifolia forms. Crossed with the wine-red form the progeny are for the most part lilac-rose in colour and tend to favour "globosa" in size of blossom and habit of growth. In the second generation forms which, as regards type could hardy be distinguished from the original globosa, are produced. They vary considerably in colour from a delightfully cool mauve-pink to rosy-carmine, and are altogether attractive. The typical D. polifolia has a tendency to develop a heavy crop of blossom and then to bear flowers in a desultory way until autumn; the globosa forms, including the second-generation seedlings referred to, produce flowers in succession and in considerable bulk for a long period.

It seems likely that more could be made of the Daböecia than has yet been attempted, but on the basis of its present development, it is worthy of more extended use. It is of the easiest culture in peaty or moorland soil or in lime-free loam. Far more tolerant of drought than a Rhododendron, it yet has no objection to winter flooding. It lends diversity and charm to the Heath garden, and just as Azaleas serve to keep the sun's rays from, and to retain atmospheric moisture at the bases of our grandest Lilies, the Daböecia may be utilised in the rock garden to afford a little shelter to and to conserve a little humidity for some of the Lily's congeners, the choicer Fritillarias.

The wild garden and the shrubbery provide other places where the Daböecia makes an effective display, but with this, as with most other plants, it is wise to group boldly in one position rather than to scatter specimens here and there.

Propagation, apart from seeds, is by cuttings of half-ripened wood, preferably with a heel, from layers, or what amounts to much the same thing, by deep planting and subsequent division. Those not *au fait* with fine propagation work find the Daböecia easier to increase from cuttings than the true Heaths. The larger cuttings certainly form plants more quickly. *R. V. Gifford, Woolley.*

POTENTILLA.

THE German-raised hybrid, Potentilla Friedrichseni, is the most vigorous-growing of the shrubbery Cinquefoils, and when planted in a good loamy soil attains to six feet. The yellow blooms are lighter in tone than those of P. fruticosa, one of its parents, and they are freely borne for several months at the end of the summer.

P. fruticosa is one of the few native British shrubs planted for decorative effect in gardens, and forms a bush several feet high; the flowering season of this species is from June to September. The best of its several varieties are grandiflora, an improvement on the type; Vilmoriana, with grey-green foliage and cream-coloured flowers; glabrata, with white flowers, three-quarters-of-an-inch across; tomentosa, an upright grower, with larger, clear yellow blooms; and micrandra, with a somewhat squat, spreading habit.

These shrubby Potentillas are showy, late-flowering subjects, and may be effectively grouped in the herbaceous border with the blue Aconitum Napellus. The yellow flowers are conspicuous in the shrub border when environed with dark-foliaged subjects. They may also be planted in the rock-garden, for distant effect in the wild garden, for forming low hedges in the pleasure grounds and for furnishing beds in grass. *Fred W. Jeffery.*

NOTICES OF BOOKS.

The Garden: Its Craft and Architecture.

FOR a work so extensive as the *Geschichte der Gartenkunst** (see also p. 210), it is not easy to evolve a perfect plan, and a certain amount of overlapping is almost inevitable. The books are divided into sixteen chapters, and while some of these are self-contained, others cover only a part of the subject. Hence, if we would study English Gardens, for example, we must go from chapter X to chapter XIII, and then to chapter XV, and even XVI. If there had been an index this would not have mattered so much. As it is we have to turn to the List of Contents in the first volume and glance down three pages, then through the same number of pages at the end of volume II.

For a work of reference this is exceedingly awkward, and nothing remains but for the student to compile his own index. The Name Register supplies the need only in part, since such subjects as landscape gardening, parterre, or miniature gardening find no place therein.

For the rest I have only commendation. The first chapter is devoted to Egypt (pp. 1-25), and to some extent supplements the articles we published in this journal in 1925.† It is to be noted, however, that during the past few years our knowledge of Egyptian Gartenkunst has been greatly extended. Not only have new pictorial representations been discovered, and bunches of Grapes modelled in mud and glazed, such as adorned a moulding or cornice, but sunk gardens, zoological gardens, and evidences of vine and other arbours traced. Very interesting, too, is the recovery of certain papyri on which are accounts in connection with the taxing of orchards and vineyards. The list of Egyptian flowers, fruits, vegetables and trees is now a very extensive one, and it would need a volume of considerable size to contain all that has been opened up on the subject during the past decade.

Assyrian and Babylonian gardens are considered in chapter II (pp. 29-51); and here again I find myself on ground made familiar by the articles with which I began my series last year. Only twenty-two pages, including a full-page plate and eighteen illustrations are allowed for the whole of West Asia in antiquity, including Babylonian, Persian, Indian, Hebrew and other gardens. There is allusion to Buddha, but the Garden of Lumbini (*Gard. Chron.*, June 12, p. 422) is not mentioned. Allusion is, however, made again to Persia in the fifth chapter.

The intervening chapters deal with the gardens of Greece and Rome, which will be specially studied in forthcoming papers on Classical Gardens in these columns. It may be noted that Pompeii is very fully treated, as well as the Gardens of Adonis and Alcinous.

Byzantine Gardens, together with those of Islamic countries, occupy pages 143 to 176, and in this chapter we find ourselves in places which are not generally well-known, excepting Spain. To Spain and Portugal, however, in the time of the Renaissance, the whole of Chapter VIII (Vol. 1, 371-410) is devoted. This is preceded by a similar chapter on Italian gardens, with many fine illustrations of the Boboli gardens in Florence, and numbers of others of great interest and attractiveness. The other chapter (VI, pp. 177-215) is given up to various western lands during the middle ages, and treats largely of the gardens connected with monastic buildings, including Canterbury, Clairvaux, St. Gallen and others. I do not find it easy at first sight to make out what is meant by the statement (I, 186) that King John of England made a gift of a twelve-acre orchard or fruit-garden to Stanthorny Priory. I conclude that Llanthorne Abbey, some six miles from Abergavenny, is intended. So Wreshill Castle (II, 52, 502) seems to stand for Wressal Castle, in Yorkshire, built in the time of Richard II.

Turning to the second volume, the reader finds himself in more modern times, the period under consideration ranging from the time of the Renaissance in France till the present. The whole of this volume, except chapter XIV, which deals with China and Japan, is devoted to Europe, and embraces such subjects as France (ch. IX), England (ch. X), Germany and the Netherlands (ch. XI) at the time of the Renaissance, the garden during the time of Louis XIV (ch. XII), English landscape gardens (ch. XV), and two chapters (XIII and XVI) on the influence of France on horticulture, and some other subjects of a kindred nature.

Here, evidently, is much matter of unusual interest for the English gardener, though some of us turn with even greater curiosity to the section devoted to the Far East. There are allusions to Marco Polo and the Jesuit fathers, many illustrations of varying age down to recent photographs of the Palace Gardens at Peking, tea gardens, gardens attached to temples and the like. One could have wished that the clumsy German method of transliterating Chinese names had been set aside; and especially the redundant letters in Schang, Mandschu, Tschou, Schi and other names rejected in favour of the reformed spelling, thus bringing them more into harmony with other European methods of writing.

It is natural to find in this chapter allusions to the method of growing dwarfed trees in pots, and here (II, 342) one again meets with the incorrect Fu-tshan for Fat-shan, near Canton. In chapter II, 349, are a number of representations of the way in which the Japanese arrange single flowers and sprays in vases, but their full significance and beauty are only to be appreciated by those who have some knowledge of Eastern art, and some sympathy with Oriental modes of thought and expression. Except with these qualifications, it would be affected and pedantic to attempt the Japanese mode in the English home.

I have perhaps lingered long enough over these two sumptuous volumes to enable the reader to form a fairly accurate opinion of their contents, and of their value as a contribution to the history of a great and fascinating subject. My chief regret is that there is no guide to such subjects as hanging gardens, topiary work, dwarf trees, knotted beds and other themes in the index, especially as frequent allusions thereto are scattered through the volumes. I also regret that the table of contents is at the end of each volume, while page viii, which is blank, might have usefully been devoted to a list of the sixteen chapter headings. *Hilderic Friend, Cathay, Solihull.*

THE CONTROL OF WIREWORMS IN GLASSHOUSES WITH CYANOGAS.

RESULTS in the control of wireworms from experiments carried out by Mr. Miles, B.Sc., N.D.A., may be of interest to readers of *The Gardeners' Chronicle*.

This new method of controlling soil pests is one which would appear to have great potential possibilities. Gardeners, when making up their potting soil, would undoubtedly like to feel that such soil is free from many of the injurious insects which are likely to do considerable damage to the plants, and which are no doubt responsible for the high mortality of the plants.

The soil in glasshouses is occasionally heavily infested with wireworms, especially where recently ploughed land has been enclosed, or where fresh lots of rotted turf are taken into the greenhouses. In some cases the numbers of wireworms amount to so many as 200,000 per acre, and each wireworm exists in the soil for so many as five years, during which time it may cause serious damage to Tomato plants.

Where heavy infestations occur, it is a common thing for a grower to have to replace as many as a quarter of the plants due to wireworm activity. In view of the serious nature of wireworm infestation, Mr. Miles, B.Sc., N.D.A., has spent a considerable time studying the problem, and his investigations have reached a point where co-operation on the part of the growers is invited to test thoroughly the system devised.

The method is to drill Wheat in rows two feet apart and at a depth of two to three inches. Wireworms are particularly fond of Wheat and assemble to the rows of bait and feed on the germinating grain. In about a fortnight the great majority of wireworms will have assembled at these bait rows and Cyanogas (granular calcium cyanide) is applied to the rows of bait by means of a Planet Junior Drill with a special deep plough attachment, enabling the material to be deposited four inches deep, *i.e.*, just below the level of the bait and the wireworms. The calcium cyanide absorbs moisture from the soil and gives off the toxic fumes of hydrocyanic acid gas, which kills practically all insects within the range of its activity. After the cyanogas has been applied the soil is left undisturbed for about a week, when it may be lightly worked to liberate any remaining fumes. When the soil is worked at the end of this period, a good percentage of the wireworms will be found to be dead in the vicinity of the bait rows, and the bait crop is, of course, quite killed by the cyanogas, so that the grower is not troubled with Wheat plants growing in his glasshouses after the treatment.

Experiments have indicated so far that the most satisfactory amount to use varies from two-and-a-half- to three-and-a-half pounds per 150 feet of bait row, according to the nature of the soil and other local conditions. Under ordinary conditions three pounds per 150 feet of bait row will be found satisfactory.

When the Cyanogas (calcium cyanide) has given off its fumes, there is no injurious residue left behind in the soil, and all that remains is a little nitrogen and a little slaked lime, both of which have a stimulating effect on plant growth. Plants may be set out in treated soil about a week after treatment, so that the whole process takes about three weeks under ordinary glasshouse conditions. Where the temperature is very low, as is the case in mid-winter, wireworms will not come readily to the bait, so that this treatment is best carried out either in spring, just before planting, or in the autumn, immediately after the removal of the old plants.

A greenhouse known to be heavily infested with wireworms, was kindly loaned by a grower in the Worthing district. Here, on February 24, Wheat was drilled in rows two feet apart and on March 3 eight yards of bait row were examined and 194 wireworms were found to have assembled at the baits, an average of eight wireworms per foot. This indicated that the wireworms were being speedily attracted to the bait. Subsequently, on March 10, that is, a fortnight after baiting, Cyanogas (granular calcium cyanide) was applied to the bait rows by means of the Planet Junior Drill above referred to. On Monday and Tuesday, March 15 and 16, representative portions of the treated bait row were sifted out, when the following results were obtained:—

Amount of Cyanogas per 150 feet.	Length Examined.	Wireworms collected.			% Kill.
		Dead.	Alive.	Total.	
2 lbs. per row ...	6 yards	141	22	163	86.50 %
2½ lbs. per row ...	6 yards	151	0	151	100.00%

From these figures it will be seen that in the case of the lower dressing, the per cent. kill averaged 86.50%, while in the case of the higher dressing 100% kill was obtained. Since the conditions under which this trial was conducted were most ideal, under ordinary circumstances a dressing of three pounds per 150 feet of row would be most likely to yield the best results.

In addition to destroying the wireworms present, many click beetles, the parents of the wireworms, are also destroyed by the calcium cyanide and, in some cases, in the trial at Worthing, up to ten dead click beetles were found in a yard of the bait row. *Theodore Parker.*

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* *Geschichte der Gartenkunst.* Marie Luise Gothein.

† Vine in Egypt, May 30, p. 374; Mummy Plants, June 20, p. 436; Egyptian Garden Craft, July 25, p. 70.

NURSERY NOTES.

ANNUAL FLOWERS AT READING.

THOSE who have occasion to travel during the summer time between London and Reading do not need to be reminded of the two feasts of floral colour provided by Messrs. Sutton and Sons, one near Slough, on the site of the old Veitchian nursery, and the other on the eastern approach by rail to the town famous alike for seeds and biscuits. To railway travellers, however, the feast is over ere it is well begun, and to enjoy it to the full one must alight, enter at Slough or Reading, and visit the nurseries.

At Reading the display of annual flowers has been unusually fine this season and at its very best during the early half of August, when two big borders demonstrated the ability of a proper selection of annuals to provide a wealth of flowers over a long period of summer time. The planning of a border of annuals must always follow along the lines of personal taste, modified by circumstances of convenience and situation, nevertheless, if Messrs. Sutton and Sons were to provide a plan of one of these borders, with a key giving names, heights and colours of the plants used, it would prove of immense value for purposes of reference and be an incentive to the interesting practice of raising annuals from seeds for the decoration of the garden.

The two borders referred to were not in duplicate, so far as arrangement of the plants is concerned, but each contained similar kinds and varieties of annuals. A few of the most attractive in mid-August were Viscaria, Linum, Mignonette, Lupins, Coreopsis, Clarkia, Malva, Poppy, Hieracium, Convolvulus, Godetia, Sweet Sultan, Bartonia, Candytuft, Chrysanthemums Eastern Star and Morning Star, Calendula, Larkspur, Erysimum and Eschscholzia. In every instance the seeds had been sown on the site, and beyond the thinning of seedlings and hoeing, no special attention has been given the plants; indeed, the borders provide ample proof—if such were needed—of the ease with which a splendid floral display may be created at a comparatively small cost of material and labour.

Even more gorgeous than the borders referred to, were the two large corner groups of dwarf Tropaeolums, and here also the plants were from seeds sown on the spot. Each group consisted of several hundred plants, representing Messrs. Sutton's Brilliant Mixture. The wide range of floral and foliar colouring combined to produce a wondrously beautiful picture, wherein all was richly harmonious. If a painter could transfer to canvas a correct reproduction of the scene with its cream, yellow, buff, saffron, fawn, pink, cerise, salmon, orange, orange-scarlet, scarlet and crimson flowers, his picture would probably be regarded as one drawn from imagination.

Messrs. Sutton and Sons have made great improvements in Godetias, and two of their new varieties, one a lovely pink, will be offered next year.

The modest Brachycome iberidifolia has also been a subject on which the art of the raiser has been practised, with the result that bushy, free-flowering plants have been evolved, far different to the type seen a score of years ago; already there is a modest range of colouring amongst blue shades, while a race of Cactus-flowered varieties has also been evolved.

In various parts of both the Reading and Slough nurseries big patches of annuals were to be seen, ranging from the graceful but unobstrusive ornamental grasses to the vivid attractiveness of Eschscholzias. Altogether, Messrs. Sutton and Sons have this year no fewer than nine hundred and nine separate trials of annuals.

A few other kinds than those mentioned, of outstanding interest and importance, were the double Scabiouses, Shell Pink and Pink Pearl Larkspurs, an intensely blue form of Nigella, blue, rose and white Viscarias, a capital selection of Leptosyne Stillmannii, Sweet Sultans, Asters in great variety, and Clarkias of brilliant hue.

Viola Apricot, with soft, apricot-yellow flowers and a good habit, is said to come true from seeds; it is a capital edging plant and so also is Lobelia Cambridge Blue, a variety that will make a strong appeal to those who love the old bedding plants. Both these plants are treated as annuals. Antirrhinums are a host in themselves, and the breadths of new seedlings show that the Reading firm is continuing its work of improvement in this popular subject.

Although outside the scope of this note, the Hollyhocks were so arrestingly beautiful as to demand mention, and Orange King, Peach and Rose King are three very fine varieties among many good ones. *C.*

WHAT CONSTITUTES A "HARDY HERBACEOUS" PLANT?

THIS old query has once more been raised at flower shows all over the country, and as in time past, no definite ruling has or can be given. A plant may be hardy in one part of the British Isles, and only half-hardy in others, and where the competitors are drawn from a wide area, this difficulty is bound to arise.

Prominent amongst disputed plants is Lobelia cardinalis, which even in the west is doubtfully hardy, but the fact remains that for a number of years it has survived in the open border without further protection than that of a coating of sand and ashes to protect it from the attacks of slugs. True, the spikes which develop with this treatment are small compared with those grown under more favourable conditions, but these again might be greatly improved if the clumps were replanted each spring in well-enriched ground, as is probably done with the other plants not disputed as being hardy.

Campanula pyramidalis is another case in point, because it is more often seen and treated as a biennial; those growers who have not proved that it will survive for many years in a dry, well-drained border, or who may not have seen the damage that its fleshy roots can do when they penetrate the crevices of a wall, might be pardoned for claiming it is not a perennial. There is no doubt that under certain conditions C. pyramidalis is hardy, although the spikes produced on old plants lack size and appearance when compared with well-developed specimens treated as biennials.

In this same category comes Salvia patens, that glorious true-blue amongst flowers. This Sage is usually treated as a summer-bedding plant and propagated annually in the spring in heat, yet I know a border of this plant thirty yards long that has not been replanted for six years, and is even now a mass of blue, three feet or more high, and as much across, proving conclusively that, in the west, Salvia patens is a hardy herbaceous plant. A more doubtful case is Phygelius capensis, which is sometimes shown in collections of hardy herbaceous flowers. Nicholson defines the plant as a South African shrub; my experience is that in southern and western gardens Phygelius capensis forms a flowering shrub from three to six feet high, and does not die down in winter, and thus cannot be termed herbaceous, but in the north and easterly districts it is killed to the ground each winter and comes up with redoubled energy in the spring from its creeping, underground roots, in the approved fashion of a true herbaceous plant.

Another shrub which I have known to behave in this way is the common Fuchsia and its varieties; here in the west they form hedges and great bushes ten feet to twelve feet high, surviving from year to year in true bush form, but in another garden, not fifty miles away, the Fuchsias grown in the herbaceous border are killed down to the ground in winter, springing into fresh growth again in spring and flowering in autumn.

These few instances may recall others to readers and show the need for some authority to make a definite pronouncement on this subejct, such as the Council of the Royal Horticultural Society or the Botanic Gardens of Kew, Edinburgh or Glasnevin. *A. T. H.*

REMARKS ON THE CONDITION OF THE FRUIT CROPS.

(See Tables and Summaries, Ante, pp. 111-117.)

(*Continued from p.* 214.)

MIDLAND COUNTIES.

OXFORDSHIRE.—The fruit crops, with the exception of Plums, bush fruits and Strawberries are equal to the average. The trees and bushes in spring were all heavily clothed in blossom, Pear trees looking as though covered with snow, but the long, cold and wet spring had a very bad effect on the setting of the fruits, consequently the crop is only an average one. Plums are very plentiful, especially the variety Victoria. Insect pests have been rather troublesome, especially green fly, and I found them somewhat difficult to eradicate on Black Currants owing to an excess of rain in late spring and early summer. The soil is a very heavy loam, overlying stiff clay. *Victor R. S. Gammon, Eynsham Hall Gardens, Witney.*

STAFFORDSHIRE.—The early spring gave great promise for a heavy crop of all kinds of fruits in these gardens, and the district generally, but frost during the last week in April and the first three weeks in May defeated our expectations. During that period there were only five nights that we did not have frost. Red Currants fell from the bushes, but Gooseberries withstood the cold better. Plums and Damsons on standard and bush trees suffered badly, and only a sprinkling of the crop is left. Plums on walls are a good crop as also were Red Currants. Apples are a very thin crop but the fruits are of very good quality. This applies to both dwarf and standard trees. Insect pests have been very bad on all fruit trees, the worst I have known for years. Woolly aphis is very bad indeed. Pears and Apples are very free of black spot. Taking the fruit crops generally they are an improvement on 1925. The soil is a stiff clay. *J. W. Miskin, Woodseat Gardens, Rocester.*

——Fruit trees in this district produced blossom in plenty, the trees being absolutely white. Apples promised well, but, unfortunately, 6° of frost were registered here on May 14 and 15. Strawberries were a good crop, but later than usual. Pears are almost a failure. Gooseberries and Raspberries have done well. *Edwin T. Gilman, Hillside Gardens, Rugeley.*

——Pear and Plum trees flowered freely and fruits set well during favourable weather, but they were severely attacked by aphis. Apples blossomed freely but late frosts proved very severe after rain fell and killed the bloom, except on trees in very sheltered positions. All small fruits carried good average crops. Our soil is heavy on a layer of clay with red sand below the clay. *H. Cragg, Grange Gardens, Wergs, Wolverhampton.*

WARWICKSHIRE.—Fruit crops generally are a success. Apples, Pears and Plums have good crops as a result of insects being kept at bay by syringing. Raspberries and Black Currants in an exposed part of the gardens suffered badly from late frosts although those in a more sheltered position were much more satisfactory. Strawberries were practically a failure, The Duke giving the best crop out of eight varieties. This is a most reliable cropper with good, healthy growth. The soil is heavy clay overlying limestone, a most difficult and unkind material to work. *W. E. Wright, Stockton House Gardens, Nr. Rugby.*

——The soil in this district is a good loam, slightly on the gravelly side; the subsoil is heavier in texture, tending to clay. Old Apple trees are infested with woolly aphis more than usual. Aphis (green fly) has been much in evidence, especially on Plum trees and Black Currants. Damsons are a failure as also were Raspberries which probably suffered from continued spells of frost, followed by cold, wet weather when the canes were dormant. Peach trees on south walls outside blossomed profusely but failed to set. Active leafy growth on Peach trees did not become manifest till after the middle of June. Red Currants, Gooseberries and Loganberries were heavily cropped. *John E. Gillies, Moxhull Park House Gardens, Wishaw, Erdington, Nr. Birmingham.*

——The outdoor fruit crops again leave much to be desired. Apples and Pears, which carried quite a good display of bloom, suffered from frost and cold winds, immediately after the fruits set, and consequently many of the latter dropped. The best crops of dessert Apples are on Worcester Pearmain and Allington Pippin, whilst Cox's Orange Pippin is nearly a failure here, and culinary Apples scarce. Strawberries were caught by the frost and were not so large as usual. Red and Black Currants were poor in quality, also Raspberries. Loganberries were very good. Peaches and Nectarines are poor, although excellent under glass. Apricot trees are carrying quite heavy crops, and also some varieties of Plums. *H. F. Smale, Warwick Castle Gardens, Warwick.*

——Most of the fruit trees in this district were a mass of blossom, having the finest display for several years, but the promise of bumper crops has not materialised owing to very cold nights and frost at the end of May. Apples suffered the most and the crop is a very light one. Pears are a very good crop. Plums are plentiful, the variety Victoria carrying the heaviest crop. Strawberries were a poor crop. Gooseberries were good and the fruits of good quality. Many Black Currant plantations in this district were affected by blight. *A. E. Moss, Billesley Manor Gardens, Alcester.*

——The Apple crop is most disappointing, only the varieties James Grieve, Rival, Bismarck and Golden Spire producing anything like an average crop. Pears are a trifle better, Doyenné du Comice, Louise Bonne of Jersey and Marie Louise carrying fair crops. Early Plums were fairly good; Rivers' Early July, Greengage and Belle du Louvaine are carrying average crops, but nearly all the other varieties are a failure. Black Currants promised a bumber crop but the fruit failed to swell. Raspberries and Strawberries were both of very good quality and gave fair crops. The soil is a heavy clay on limestone. *Chas. Marchment, Moreton Hall Gardens, Moreton Morrell.*

(To be continued.)

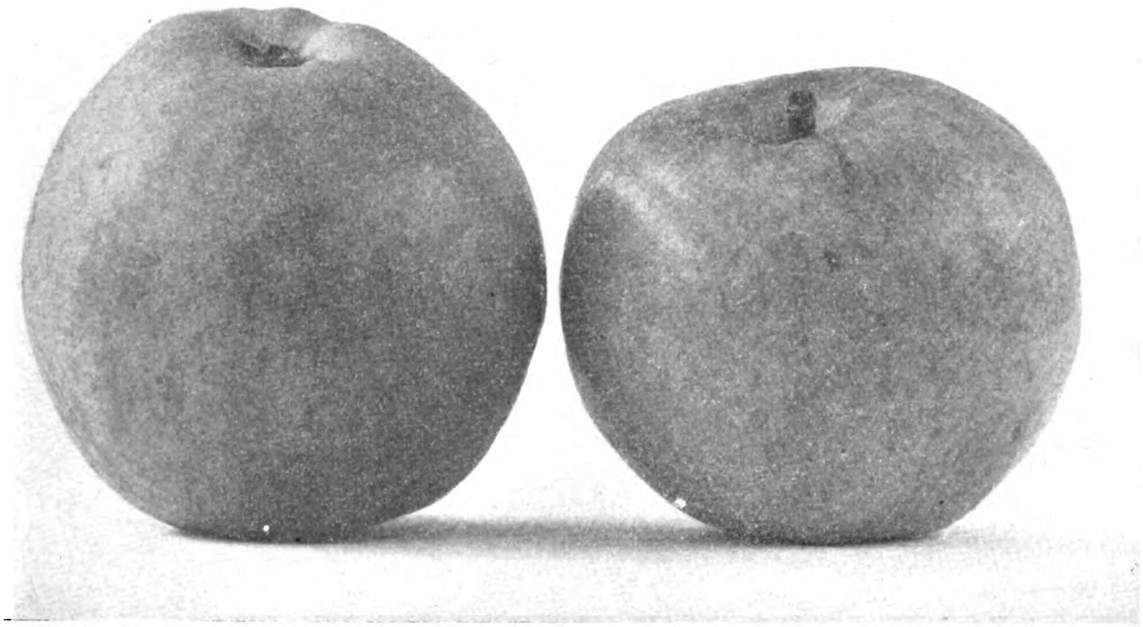

FIG. 113.—APPLE EXQUISITE.

Provisional R.H.S Award of Merit, September 7. Shown by Messrs. Laxton Brothers (see p. 217).

FRUIT REGISTER.

SELECT EARLY APPLES.

Of early Apples there is a wide choice, but the grower who plants wisely will restrict his varieties to some half-dozen of the very best, endeavouring to select those sorts which blend quality with a vigorous constitution and are free-cropping.

Beauty of Bath is an excellent Apple, ready for use early in August. The tree makes a neat bush and is prolific and reliable.

The fruit is small to medium, flat, yellow, beautifully striped and spotted red; the flesh is soft and of fair flavour.

The fruits should be gathered before they are quite ripe and stored in a cool place, more particularly as they are apt to drop before reaching maturity. This Apple was introduced by Messrs. Cooling, of Bath, so long ago as 1865. The variety is self-fertile.

Gladstone may not possess remarkably good flavour, but it ripens during the latter half of July and the early part of August and the fruits are most refreshing during hot weather. The tree makes a good bush which should be pruned but lightly. The tree is a prolific and regular cropper. According to Bunyard in *A Handbook of Fruits*, this Apple was found by a Mr. Jackson, of Kidderminster, and introduced in 1868.

It is most surprising that the variety Gravenstein is not more generally grown, for although scarcely in the category of early varieties, it is delicious at the end of September and early in October. The flesh is crisp, fragrant and juicy and of delicious and distinct flavour, and the only fault to urge against it is that it is not quite so heavy or regular in cropping as some others. The fruit is of medium size and angular in shape; the colour is pale yellow, prettily striped with rose. This Apple was known so long ago as 1760, and probably is of Danish or German origin.

Lady Sudeley is one of the very finest of early dessert Apples, ripening from August to September. The fruit is of medium size, slightly angular and prominently striped with crimson. The flesh is tender, juicy and of delicious flavour. The tree makes a good bush or espalier, is of neat growth and a regular and heavy cropper. The fruits are best eaten from the tree, although if gathered a little before maturity it is possible to keep them for a few weeks. This fine Apple was introduced by Messrs. G. Bunyard and Co. in 1885. The tree is self-fertile and makes a good standard for orchard planting.

Irish Peach is an Apple of fine flavour, ripening in August; the fruits are small and nearly flat, coloured pale yellow, with a few pretty red stripes. The flesh is soft, very juicy and of good flavour. This Apple also is best eaten direct from the tree. The latter is of rather thin growth and should be pruned very lightly, in fact, as little as possible, for it often bears on the tips of the branches. This Irish Apple was introduced about the middle of the last century.

James Grieve is one of the most serviceable of September Apples of recent introduction; the fruits are of medium size, very regularly shaped, yellow, flushed and striped red. The flesh is tender, juicy and of good flavour. The tree is a regular cropper and succeeds as a bush, pyramid or espalier; this fine Apple is valuable in the latter half of September This variety, bearing its raiser's name, was introduced to commerce by Messrs. Dicksons, of Edinburgh, in 1890, or the following year.

Other early Apples, excellent in every respect, are Langley Pippin (Gladstone × Cox's Orange), raised by Messrs. J. Veitch and Sons in 1893; St. Everard, the earliest Apple with the flavour of Cox's Orange Pippin, and ripening in September, also introduced by Messrs. J. Veitch and Sons, the parentage probably being Cox's Orange Pippin × Margil; and White Transparent, sometimes classed as a culinary Apple, but wholly delicious when eaten from the tree in July and August.

PEACH BARRINGTON.

This fine old Peach is one of the very best for growing in unheated cases or on open walls, being very hardy and prolific.

The fruits are large, yellowish-green, with red stripes and flushings; the flesh is pale yellow, reddish at the stone, rich, juicy and of fine flavour.

The fruits ripen about the middle of September This Peach was raised by Mr. Barrington, of Burwood, Surrey, during the early part of the nineteenth century. The tree is a sure cropper, vigorous and healthy, and will provide excellent fruits for exhibition purposes. *Ralph E. Arnold.*

VEGETABLE GARDEN.

POTATO CROP, 1926.

THE following note may be of interest to other gardeners who are anxious to get the most out of the ground under their care. Before I took over my present position my experience had been on sandy, gravelly and hot soils, and it seemed strange to work on the clayey soil of north Essex. Further, the garden had been badly neglected, and it was evident that my predecessors were beaten. I took charge on March 1, a time when garden work should have been well forward. Nevertheless, I was given a wilderness and told to make the best I could of it. No seed Potatos had been bought, so it was useless to think of sprouting any. I tried many varieties, but the results are not yet complete. The following are worthy of special mention:—

Sharpe's Express.—These were planted on March 7, and we had a splendid sample of new Potatos on June 11. Twenty-eight pounds of seed yielded seven hundredweight of tubers. This variety should not be left in the ground too long.

Epicure.—Another splendid cropper, larger in size than Sharpe's Express, but not so prolific. They do not seem to be keeping so well either.

Ally.—This seed was not of the best but the crop was heavy; a clean, healthy Potato.

Majestic.—The best yet. I shall grow this more extensively another year.

Longkeeper.—A failure. The tubers are healthy but very small. I am inclined to believe that this variety would do better in a wet season. I am convinced that it does not like a large amount of sun heat.

I may add that all my Potatos were dibbed in this year owing to pressure of other work. The ground was manured in the spring, and sulphate of ammonia was sprinkled between the rows before the first earthing up. In the first four Potatos named we have varieties worthy of further attention and cultivation in these districts, and there may be others to add. *J. A. G., Loughton.*

HOME CORRESPONDENCE.

A Fine Hydrangea.—I enclose a photograph (Fig. 108, p. 225) which I took on August 18 of a particularly fine specimen of a pink-flowered Hydrangea growing in Miss R. Jackson's garden at Niton, Undercliff, Isle of Wight. The plant carried no fewer than 315 heads of bloom and your readers will be able to obtain some idea of its size by comparing it with the foot rule which is to be seen on the steps. *M. A. Arber, Cambridge.*

Scientific Exhibits at Chelsea Show.—In your issue of June 5, attention was drawn to the small number of visitors to the scientific tent at the R.H.S. Chelsea Show. Unfortunately, this was true, but I hope the Society will not think of abandoning the tent, for to some, at any rate, it was of very great interest. At the last two shows I have spent a good portion of my time in this tent, and have gathered much useful knowledge from the exhibits. I am sure that the exhibits both from Rothamsted and Cheshunt were a mine of information for anyone who took the trouble to study them. The exhibit of Barley growing in water lacking various minerals—showing the effect on the plant—must surely make the horticulturist consider the effect of the presence, or lack of, these various minerals on his crops. Certainly photographs of similar experiments may be seen in books (such as *Fertilisers and Manures*, by Sir A. D. Hall), but it is more instructive to see the actual plants. Then again, at the Cheshunt exhibit, information was given on the control of white fly, woodlice and other glasshouse pests. The exhibit by the R.H.S. of pests of the Rhododendron, and suggested methods of control, were instructive, and of great interest to all lovers of these gorgeous shrubs. The exhibit from Wisley, of plants affected with various diseases, was also well worth study. *Harry E. Brooks, Chewton Priory Gardens, Bath.*

SOCIETIES.

NATIONAL ROSE.

SEPTEMBER 10 AND 11.—This Society held an exceedingly successful show of autumn Roses at the R.H.S. Hall, Westminster, on these dates. As usual, under the able management of the energetic hon. secretary, the excellent arrangements worked very smoothly and judging was finished before the appointed time of opening the show. Competition was especially good in the classes for representative groups of Roses which, arranged around the hall, provided glorious displays of lovely blooms. Competition was also good in the general classes, while the artistic classes continued their great popularity and were responsible for many tastefully arranged tables, bowls, vases and baskets. There were many new Roses for the Council's consideration, but only a small proportion were of outstanding merit. During the evening of the first day, the Society held a very successful dinner at the Savoy Hotel as part of the Jubilee celebrations. There was a good attendance under Mr. C. C. Williamson, and the speakers included Miss Willmott, Mr. H. R. Darlington, Col. F. R. Durham, Mr. George Monro, Mr. Wm. Cuthbertson and Mr. Courtney Page.

GOLD MEDAL.

Patience.—This glowing, rosy-cerise H.T. variety (see Fig. 107, p. 223), received a Certificate of Merit at the recent provincial show, held at Southport, and now obtains the highest award. We imagine that to the critical rosarian it falls a trifle short of the Gold Medal standard. In the bud stage it is very beautiful, but the fully open flowers disclose occasional stripes and marks of white on the petals. Also, the colour becomes a trifle thin, so that the edges of the petals are paler in shade and now and then a petal is mottled. Shown by Messrs. S. McGREDY AND SON.

CERTIFICATES OF MERIT.

Charles P. Kilham.—A long-stemmed, fully double H.T. variety, described by the exhibitors as being of " brilliant orange orient red " colour, suffused with glowing scarlet. This probably describes the Rose at about the end of June, but to us, the flowers now shown were of deep pink colour lightly suffused with scarlet, and there was a tendency towards magenta in the mature blooms, which disclose a touch of gold at the base of the petals. The flower stems are purplish and the dark green foliage is clear and firm. Shown by Messrs. G. BECKWITH AND SON.

James Ferris.—This is a very handsome exhibition Rose of lemon-yellow colour. The rounded blooms have plenty of substance and the broad petals recurve gracefully. It appeared to be of vigorous habit, and to be free-flowering. The foliage is firm and good. We should expect this Rose to be awarded a Gold Medal in the near future. Shown by Dr. CAMPBELL HALL.

The Clay Challenge Vase, which has been open to competition at all the Society's shows during the year and is for the best new scented seedling Rose of the year, was awarded to *Dame Edith Helen*, shown by Messrs. ALEX. DICKSON AND SONS. This beautiful and fragrant H.T. variety received the Certificate of Merit last year and the Gold Medal at the Spring Show this year, and was illustrated in *The Gardeners' Chronicle* for May 1, 1926.

The Cory Cup, for the best new seedling climbing or rambling Rose, has similarly been open to competition throughout the year, and was awarded to *Thelma*, shown by Mr. WALTER EASLEA at the Spring Show on April 23 last. It is a pretty climber, producing shell-pink flowers which retain their beauty for a considerable time. It was stated to be a seedling from Paul's Scarlet Climber.

SOME OTHER NOVELTIES.

At one end of the New Seedling Roses there were several entered for the Clay Cup, and amongst them were *Dame Edith Helen* and *Lady Helen Maglona*, both of which, shown by Messrs. ALEX. DICKSON AND SONS, have received a Gold Medal earlier in the year. Dame Edith Helen confirmed the golden opinions previously formed of its merits, but Lady Helen Maglona is apparently better in the summer than in autumn. *Cornelia*, shown by Mr. J. H. Pemberton, is a perpetual-flowering hybrid-musk variety bearing trusses of flattish, double flowers of old rose colour which pales slightly with age. They have a pleasant Musk Rose perfume.

Amongst the other novelties which were not in competition for the Clay Cup, *George Haworth* and *J. C. Thornton*, both shown by Messrs. BEES, LTD., appeared to be very desirable decorative Roses. Both are well-formed, fully double H.T. varieties. The former is of glowing scarlet colour flushed with rose and touched with gold at the base of the petals. J. C. Thornton is of rich velvety crimson colour, flushed with maroon at the base of the broad, substantial, recurving petals. *Portadown Yellow* and *Portadown Scarlet* are much alike except in colour. The former received a Certificate of Merit at the recent Southport show. It is of rich golden yellow colour and has neat, dark, stiff, foliage. The scarlet variety is also beautiful in the bud state and has good foliage. These were shown by Messrs. S. McGREDY AND SON. *White Ensign*, from the same raisers, received the Society's Certificate of Merit last year, and is a very useful H.T. variety of creamy white colour with a yellow glow in the heart of the flower.

GROUPS OF ROSES.

There were nine large groups of representative Roses arranged on a table space of fifteen feet by four feet, and these presented a brilliant spectacle. The first prize and Silver-gilt Medal were won by Messrs. S. McGREDY AND SON with an excellent arrangement of pillars and baskets of lovely Roses. Their chief varieties were Mrs. Henry Morse, Mabel Morse, Admiration, Margaret McGredy, of glowing colour, Betty Uprichard, Mrs. H. Barraclough, Diadem, Padre and White Ensign. The front of this memorable group was also admirable and was composed by fragrant blooms of Arthur Cook, graceful sprays of Phyllis Bide and of the foliage of R. sericea pteracantha, trailing down amidst blooms of Lady Inchiquin, Lady Roundway and other good sorts.

In their second prize group, Messrs. ALEX. DICKSON AND SONS had beautiful baskets of Mrs. Wemyss Quin, Betty Uprichard, Shot Silk and Lady Inchiquin, with pillars of Mrs. H. Stevens, Snow Queen and the Lyon Rose. Mr. C. GREGORY was third, and Mr. GEORGE PRINCE was fourth in this large class.

Of the five exhibits in the class for a group of cut Roses arranged on tabling measuring eight feet by four feet, the best was by Messrs. R. HARKNESS AND CO., who had a series of pretty arches and the back covered with blooms of Betty Uprichard and Mrs. Henry Morse. The body of the group was made up with baskets of Los Angeles, Hadley, K. of K. and Isabel. Mr. J. MATTOCK was second with a pleasing arrangement of pillars of Isabel, Vesuvius, Red Letter Day and Betty Uprichard, while Mr. G. LILLEY, in his third prize group, had good blooms of C. E. Shea, Madame Butterfly and Shot Silk. Messrs. D. PRIOR AND SON were fourth.

The twenty-four varieties in vases made a good class, and here Mr. J. MATTOCK was first with good bunches of Mrs. Henry Morse, Hadley, Innocence, Madame Butterfly, Betty Uprichard, and other decorative varieties. In his second prize exhibit Mr. HENRY STREET showed Christine, Mrs. Henry Morse and Innocence of good quality. Messrs. A. WARNER AND SON were third, and they included Mrs. MacKellar of good lemon-yellow colour.

Messrs. WHEATCROFT BROS. were decidedly first in the class for four baskets of decorative

Roses. They had excellent blooms of Madame Butterfly, Shot Silk, Mrs. Herbert Stevens and The Queen Alexandra Rose. Messrs. T. Smith and Sons, in their second prize exhibit had good baskets of Madame Edouard Herriot and Ophelia. Messrs. A. Warner and Son were third. Messrs. D. Prior and Son were awarded the first prize for beautiful baskets of the Polyantha varieties Else Poulsen, Kristein Poulsen and Orange King.

Exhibition Roses were of not quite so good in quality as the decorative varieties. In some instances the outer petals were weather-stained, and the exhibits were of uneven size. There were only two exhibits of twenty-four distinct blooms in boxes, and the best was shown by Messrs. T. Smith and Sons, who had a fresh and even collection, including Augustus Hartmann, Mrs. C. Lamplough, Souvenir de Georges Pernet, and a splendid bloom of George Dickson which proved to be the best bloom in the nurserymen's classes. Messrs. D. Prior and Sons were second, and their blooms showed stress of weather. The best were Snow Queen, Florence Forrester and Coronation.

Mr. George Prince had the best of three exhibits of eighteen varieties in boxes, and his clean and bright specimens included Earl Haig, H. V. Machin, Caroline Testout, Frau Karl Druschski and George Dickson. Mr. George Burch was second with a rather uneven collection, though he had large blooms of Mrs. C. Lamplough, Mrs. Foley Hobbs and Candeur Lyonnaise. Exhibition Roses in baskets were only of fair quality. Messrs. T. Smith and Sons were first and Mr. George Burch was second.

Amateurs' Classes.

The six exhibits of a basket of one or more varieties of cut Roses were of quite good quality. Mr. H. Mitchell, the first and Mr. J. N. Hart the second prize winners, both showed mixed varieties of good quality. In the similar class for blooms grown within seven miles of Charing Cross, Mr. A. N. Rogers, East Putney, was first with creditable blooms. Mrs. H. Cribb, Northwood, was first of eight in a class for those who grow their Roses unaided, and she had a very good basket of Hugh Dickson. In the same section, Mr. S. E. Tattershall, Orpington, won a first prize with a basket of mixed Roses.

Four members competed in the class for vases of six distinct varieties, and they set up excellent sprays of bloom. Mr. A. C. Turner, Woking, who was first, included Ophelia and Betty Uprichard. Mr. J. N. Hart was second. Miss B. H. Langton, Hendon, had the best blooms of five exhibitors who grow their own Roses, in the class for six varieties, and she showed Isobel, Ophelia and Los Angeles of great beauty. Mr. W. E. Moore, Ickenham, was first in the similar class for small growers, and in his second prize exhibit in the class for six distinct exhibition varieties he showed a fine bloom of George Dickson which was judged the best bloom in the amateurs' classes. In this class Mr. Gulliver Speight, Market Harborough, was first with admirable blooms of George Dickson, Augustus Hartmann, Mrs. John Laing and other good varieties.

Exhibition Roses compared very favourably with those of the nurserymen's classes. Mr. H. Mitchell, Bradford, showed best among five exhibitors of twelve varieties, and he included fine blooms of Frau Karl Druschcki, Mrs. Henry Bowles, Mrs. E. J. Hudson and George Dickson. Mr. J. N. Hart, Potters Bar, was a good second. Mrs. M. Gardner, Harrow, had the best six varieties. In the small growers' class, Mr. E. H. Pleasance, Cambridge, had a particularly good exhibit, as also had Mr. C. C. Hepworth, Muswell Hill, in the Metropolitan class, where he showed Mrs. Henry Morse, and J. G. Glassford of fine quality.

The artistic classes were especially good. In the open division Mrs. A. R. Bide, Farnham, had a delightful bowl of Phyllis Bide and Angele Pernet, while Mrs. T. R. May, Waltham Cross, was first of five exhibitors of dinner table decorations, where she used Madame Butterfly. Miss M. G. Archer, Ashford, Kent, was second with Dainty Bess.

In the amateurs' classes, Mrs. Courtney Page, Enfield, was first with a most charming dinner table decoration of Roselandia, and also first with equally artistic vases and bowls of Roses. Mrs. Charlton, Yiewsley, who used Madame Butterfly effectively, was second in the table class, and was similarly placed for a bowl of Madame Butterfly, in which class Mrs. Oakley-Fisher, Sudbury, was second with a bowl of mixed Roses.

ROYAL CALEDONIAN HORTICULTURAL.

September 8 and 9.—The autumn show of this Society was held in the Waverley Market, Edinburgh, on these dates, and, favoured by fine weather, there was an excellent attendance, the takings at the doors being over £200 in excess of those of the 1924 show. It was generally conceded that excepting the International Show of last year, the exhibition was the best since pre-war days. Not only was there an increase of about 450 entries over the 1924 show, but the quality of the exhibits all over was of a higher standard, and the spacious market-house was very fully occupied by them. The National Association of Allotment Holders also held its annual show in conjunction therewith, and in the section allotted to it there was a very creditable display of allotment produce. Lord Elphinstone, the honorary president, presided at the opening ceremony, and the show was formally declared open by Lady Sleigh, the Lady Provost of Edinburgh.

Pot Plants.

In the classes confined to gardeners and amateurs, Mrs. Sellars, Drylaw House, Edinburgh (gr. Mr. W. Galloway), was awarded the first prize for a table of Begonias, six feet by five feet, and she also excelled for four tuberous Begonias, for three exotic Ferns, and two Petunias. Mr. J. Douglas, Royal Victoria Trust, Liberton, was placed first for three stove or greenhouse plants, and also for three ornamental foliage plants, and two Zonale Pelargoniums. Mrs. E. H. Beveridge, Kirkcaldy (gr. Mr. P. Reid), excelled for two Coleus, and also for three scented-leaved Pelargoniums, and for two Fuchsias. Allan M Wilson, Esq., Roundelwood, Crieff (gr. Mr. J. M'Kinnie), excelled for four plants for table decoration; D. Cairns, Esq., Edinburgh (gr. Mr. J. Bremner), for four Streptocarpuses; Mr. R. Kerr, Edinburgh, for nine dwarf Ferns; Major C. R. Gordon, Threave House, Castle Douglas (gr. Mr. J. Duff), for two Vallota purpurea, and Mr. W. M. Shepherd, Edinburgh, for two pots of Lilium.

In the classes confined to amateurs, Mr. J. Sinclair, Edinburgh, was first for two greenhouse plants, Mr. W. H. Shepherd for one ornamental foliage plant, and also for one pot of Lilium; Mr. J. Arnot, Corstorphine, for one single tuberous-rooted Begonia, and also for one double-flowered plant; Mr. R. Kerr, Edinburgh, for four hardy Ferns; Mr. D. Lonie, Gilmerton, for one Zonale Pelargonium, and also for one Fuchsia, and Mrs. Mitchell Gilmerton, for one flowering plant, and also for three pots of Chrysanthemums.

Roses.

In the open classes, Messrs. Adam and Carmyle, Aberdeen, excelled for thirty-six blooms, not fewer than twenty-four varieties, and not more than two blooms of one variety; Mr. Sandy Dickson, Belfast, was placed second, and Messrs. D. and W. Croll, Dundee, third. Messrs. Adam and Carmyle also excelled for twelve blooms of any pink variety, with Mrs. Henry Bowles, and for twelve of any yellow variety, with Mabel Morse. For six baskets of decorative varieties Messrs. D. and W. Croll were placed first, and Messrs. J. Fairley and Co., Cairneyhill, Fife, second. Messrs. Fairley and Co. took first place for six vases of Cluster Roses; Mr. R. C. Ferguson, Dunfermline, for twelve blooms of any red or crimson variety, with George Dickson; and Messrs. T. Smith and Son, Stranraer, for twelve of any white variety, with Frau Karl Druschski. Mr. Sandy Dickson was first for twelve new varieties introduced in 1924 or subsequently.

In the classes restricted to gardeners and amateurs, Major R. E. Davies, Glenlaggan, Kirkcudbright (gr. Mr. E. Penfold), was placed first for twelve vases, and also for four vases, for twenty-four blooms in not fewer than eighteen varieties, and for one vase of blooms of any yellow variety. Lady Dundas of Arniston, Gorebridge (gr. Mr. R. Mackenzie) excelled for three vases of Cluster Roses; Mr. J. C. Dempster, Dalguise, Dunkeld, for a vase of any crimson or scarlet variety, and Mrs. Russel, Newton Mearns, for vases of white and pink varieties respectively. In the classes for amateurs only, Mr. J. Paterson, Lamington, took first place for twelve blooms in not fewer than six varieties, and also for one vase. Mr. G. Elliot, Hawick, excelled for the vase of a rambler variety.

Dahlias and Sweet Peas.

In the open class for six Cactus Dahlias, not more than five blooms in each vase, Messrs. M. Campbell and Sons, High Blantyre, were the only entrants, and were awarded the first prize.

In the classes confined to gardeners and amateurs, Mr. J. Nisbet, Clarkston, Glasgow, excelled for three vases of Cactus, and also for three vases of Show varieties; Mr. W. Lowrie, Bowness, excelled for six vases of Collerette varieties and also for three vases of single Dahlias. Mr. C. Jenkins, Cambuslang, was placed first for three vases of Collerette varieties, and for four vases of Pompon varieties, and Mr. R. Robertson, Swinton, Duns, excelled for one vase of Cactus blooms.

Sweet Peas were well shown and they made a fine display. In the classes restricted to gardeners and amateurs, Mr. J. A. Grigor, Duff House, Banff, took first place for twelve vases in twelve distinct varieties; Lord Cochrane of Cults, Crawford Priory, Fife (gr. Mr. J. Smith), being second. Mr. Grigor was also first for six vases, and in the open classes he excelled for one vase of a lavender, and also for one vase of an orange-scarlet variety. Lord Cochrane excelled for one vase of a cream, and for one vase of any other colour. In the class confined to amateurs only, Mr. J. C. Robertson, Stranraer, took first place.

Carnations and Chrysanthemums.

Mr. W. Aitchison, Innerwick, Dunbar, obtained the first prize for six vases of Perpetual-flowering Carnations (excluding Malmaisons) and another competitor from the same locality, Mr. J. Macdonald, Prestonkirk, was placed second. Mr. F. Robertson, Linlithgow, had no opponent in the class for four vases of Border varieties, or Picotees, and was awarded the first prize.

For a display of single and double Chrysanthemums, on a table ten feet by five feet, decorated with Ferns, etc., and seen from all sides, the first prize, with which is given the Scottish Challenge Cup, was awarded to Messrs. W. P. Laird and Sinclair, Ltd., Dundee, the runner-up being Mr. T. Nelson, Rutherglen. In the only other open class, for six vases of early-flowering varieties, disbudded, Mr. W. Lawrie, Bowness, obtained the first prize.

In the classes for early-flowering varieties confined to gardeners and amateurs, Mr. J. Nisbet, Clarkston, was first for eight vases, and also for one vase of a yellow variety, and of a single variety. Mr. T. Nelson, Rutherglen, excelled for one vase of a white and also for one vase of a crimson or bronze variety, and Mrs. Beveridge, Kirkcaldy (gr. Mr. P. Reid), was successful for any other early-flowering variety.

Gladioli, Pansies and Violas.

For twenty-four spikes of Gladioli, not more than two of any variety, in the open class, Messrs. George Mair and Sons, Prestwick, had an easy win with a very fine lot. In the gardeners' and amateurs' classes, Mr. D. Whitelaw, Laurencekirk, took first place for twelve spikes, not fewer than nine varieties, and Mr. J. M. Carruthers, Corstorphine, excelled for six vases of Primulinus varieties. Mr. Whitelaw also excelled in the amateur class for six spikes of Gandavensis varieties.

There was keen competition in the classes for Pansies, and many fine blooms were staged. In the classes for gardeners and amateurs, Mr. A. Frater, Kirkliston, excelled for twenty-four blooms of Fancy Pansies, not fewer than eighteen varieties, and also for twelve Show Pansies. The first prize winners in the other classes were Mr. J. Matthews, Pumpherston, for twelve sprays of Violas, not fewer than six varieties, and Mr. H. Robertson, Kelty, for twenty-four and twelve blooms of Violas respectively. Mr. J. Paterson obtained the first prize in the one class confined to amateurs, for twelve blooms of Fancy Pansies, distinct varieties.

Herbaceous and Other Flowers.

In the gardeners' and amateurs' classes, Mr. P. F. Bauchop, Alexandria, carried off the first prize for a collection of cut flowers from the open, arranged on a space eight feet by five feet. Sir Basil Montgomery, Kinross House (gr. Mr. R. Fraser), was first for twelve vases of hardy perennials, distinct varieties. Mr. J. Richardson, Ford, Midlothian, excelled for six vases of flowers from the open, and also for six vases of Pentstemons and three vases of Montbretias. Mr. F. Taylor, Galashiels, excelled for six vases of Phloxes, and also for three vases of Scabious; Mr. W. Wilson, Nethorn, Kelso, for two vases of Michaelmas Daisies; Lady Dundas for six vases of Antirrhinums; Mr. W. F. Landreth, Coldstream, for three vases of French Marigolds; Mr. R. Robertson, Swinton, Duns, for two vases of African Marigolds; Mr. W. Redpath, Walkerburn, for two vases of single Asters and for two vases of double Asters respectively, and Mr. J. Stevenson, Melrose, for eight vases of annuals. Mr. R. Cochrane, Fauldhouse, was first for six blooms of double Begonias, and Mr. W. Graham, Lanark, excelled for a basket of of autumn foliage and berries.

In the amateur classes, Mr. W. T. Landreth led in the class for six vases of hardy herbaceous perennials, and also for four vases of half-hardy annuals; Mr. J. Richardson excelled for two vases of Phloxes, and Mr. C. Jenkin for one vase of Antirrhinums.

Decorative Classes.

In these classes, which were open to all competitors, the first prize for the decorated dinner table, ten feet by five feet, was awarded to Mr. Kenneth Scott, Monifieth. Mr. Scott was also successful for a bowl of Sweet Peas arranged for home decoration. Messrs. J. Fairley and Co. excelled for a similarly arranged bowl of Roses, and Major R. E. Davies, Glenlaggan, Kirkcudbright (gr. Mr. E. Penfold), for one of Carnations.

Fruit.

The Earl of Balfour, K.T., Whittingehame, E. Lothian (gr. Mr. Geo. F. Anderson), was the only entrant in the class for a table of twelve dishes of fruit, decorated, and was awarded the first prize of £5 5s. The fruits shown were Muscat of Alexandria and Black Hamburgh Grapes (two bunches of each), Melons King George and Superlative; Peaches Bellegarde and Princess of Wales; Nectarine Humboldt; Plum Jefferson; Pears Marguerite Marillat and Souvenir du Congres; Apples Emperor Alexander and Gascoigne's Scarlet.

Grapes.

The Earl of Balfour and the Earl of Strathmore, Glamis (gr. Mr. D. M'Innes), were the only entrants for eight bunches of Grapes, not fewer than four varieties, and not more than two bunches of a variety, and the first prize of £4 and a gold badge, with the Thomson Challenge Trophy (to be won three times) was awarded to the Earl of Strathmore, who obtained 64½ points out of a possible 74. The Earl of Balfour obtained 52½ points out of a possible 70.

The points awarded to the Earl of Strathmore's bunches were:—

			Max. Points.	Points Awarded.
1.	Muscat of Alexandria	...	10	9½
2.	,, ,, ...	...	10	9
3.	Mrs. Prince ...	...	9	8
4.	,, ,, ...	...	9	7½
5.	Black Hamburgh	...	9	8
6.	,, ,,	...	9	7½
7.	Muscat Hamburgh	...	9	8
8.	,, ,, ...	...	9	7
			74	64½

The Gardeners' Chronicle Medal for the best bunch of Grapes in the show was awarded to the highest pointed bunch of Muscat of Alexandria in the Earl of Strathmore's set.

In the four-bunch class, the Marquis of Tweedale, Yester, East Lothian (gr. Mr. A. M'Bean), excelled, obtaining 25½ points out of a possible 36; the Earl of Mar and Kellie, Alloa House, Alloa (gr. Mr. W. J. Buchanan), was second with 24½ points out of 37, and A. Harrison Crawford, Esq., Dunlop House, Ayrshire (gr. Mr. D. Airdrie), third, with 24 points out of 37.

Mr. Harrison Crawford excelled for three bunches of Black Hamburgh; the Earl of Strathmore for two bunches and one bunch respectively of Muscat of Alexandria, one bunch of Gros Colmar, and one bunch for bloom, with Gosford Black. The Earl of Balfour excelled for one bunch of Appley Towers, for two bunches of Alicante, and for two bunches of any other black Grape than those in the prize list, with Directeur Tisserand. The Marquis of Tweedale excelled for one bunch of Madresfield Court, the Earl of Mar and Kellie for one bunch of Alicante, and Major C. L. Gordon, Threave House, Castle Douglas (gr. Mr. J. Duff), for two bunches of any other white Grape, with Buckland Sweetwater.

Other Fruit.

In the open class for orchard-house-grown Apples, twelve dishes, not fewer than nine distinct varieties, five of each, the Earl of Balfour was placed first with a very fine lot; Mr. Harrison Crawford, who was the only other competitor, receiving the second prize.

With the exception of the four mentioned, all the following classes for hardy fruit were restricted to gardeners and amateurs. The hardy fruit was exceptionally fine.

For a collection of Apples, twelve varieties, five of each, Mr. Harrison Crawford was placed first, and J. J. Bell Irving, Esq., Mackerston House, Kelso (gr. Mr. R. Auldjo), excelled for a similar collection grown in Scotland. For a collection of six distinct varieties, five of each, Colonel J. P. N. H. Grant, D.S.O., Biel, East Lothian (gr. Mr. A. J. Macdonald), was placed first.

In a single dish class of Apples grown in Scotland, each consisting of six fruits, the Rev. N. C. Keith, Dirleton (gr. Mr. R. Munro), excelled for Charles Ross; Mr. J. P. Reid, Aberlady, excelled for Newton Wonder; Mr. D. Fraser, Saltoun, East Lothian, for Irish Peach; Mr. Bell Irving, Mackerston, for James Grieve, Peasgood's Nonsuch, Golden Spire, Lord Derby, Stirling Castle, and, in the class for any other variety, Cox's Orange. The Rt. Hon. Viscount Novar, Raith, Kirkcaldy (gr. D. M'Lean), obtained first place for Worcester Pearmain; Mr. R. Bathgate, Seton Gardens, Longniddry, for Ecklinville, Warner's King, and Bramley's Seedling; Mr. T. Watson, Crossford, for Grenadier; Major C. R. Gordon, Threave House, Castle Douglas (gr. Mr. J. Duff), for Lane's Prince Albert, for a dessert fruit "fit for the table," with Lady Sudeley, and for any other culinary kind, with Cutler Grieve. The Hon. Mrs. Askew Robertson, Ladykirk, Norham (gr. Mr. G. Little), excelled for Rev. W. Wilks and Mr. Kerr, Edinburgh, for Lord Suffield.

In the two Apple classes restricted to amateurs, Mr. W. Graham, Lanark, excelled for dessert Apples with Beauty of Bath, and Mr. R. Kerr, Edinburgh, with Lord Suffield in the culinary class.

The Pear classes were, with one exception, confined to gardeners and amateurs and, with the exception of the first collection, required to be grown in Scotland. Some of the fruits, especially those from Yester, were exceptionally fine.

For a collection of six varieties, four fruits of each, and also for a similar collection grown in Scotland, the leading honours went to the Marquis of Tweedale, Yester (gr. Mr. A. M'Bean). In the single dish classes, the Earl of Moray, Donibristle, Fife (gr. Mr. J. M'Kinna), excelled for Beurre d'Amanlis; Admiral Sir W. H. May, Coldstream (gr. Mr. J. Loan), for Conference; Sir R. D. Moncrieffe, Bt., Moncrieffe House, Bridge of Allan (gr. Mr. W. W. M'Lean), for Doyenné du Comice; the Hon. Mrs. Askew Robertson for Durondeau and Pitmaston Duchess; J. A. Welwood, Esq., Kirknewton House, Midlothian (gr. Mr. J. Mackenzie), for Jargonelle, and Mr. J. Mackenzie, Lochend, Dunbar, for Louise Bonne of Jersey, Souvenir du Congres and Williams's Bon Chretien. In the amateur class, six fruits, Mr. W. T. Landreth excelled with Pitmaston Duchess.

For a collection of dessert Plums, four varieties, nine of each, Admiral Sir W. H. May took first place, and the Earl of Balfour excelled for a similar collection of culinary varieties. The Earl of Balfour also excelled for twelve purple varieties, and also for twelve Gage varieties. Major Gordon, Threave House, excelled for twelve red Plums, and Mr. Mackenzie, Lochend, for twelve yellow varieties. In the classes for amateurs, six fruits, Mr. W. Baird, Coldstream, took first place.

The Earl of Balfour was first for six Peaches and also for six Nectarines. For two Melons, green or white and scarlet, the Earl of Leven and Melville excelled, and F. J. Balfour, Esq., Walkerburn (gr. Mr. D. Watt), obtained first place for a single fruit.

In the small fruit classes, Mr. W. Graham, Lanark, was first for Gooseberries; Mr. W. T. Landreth for Red Currants; Dyson Perrins, Esq., Ardross (gr. Mr. J. Melrose), for White Currants; Admiral May for Morello Cherries; and Mr. A. S. Gilroy, Melrose, for Raspberries.

Vegetables.

Vegetables were very good, and some of the exhibits were of outstanding excellence.

For a collection of twelve kinds on a space of four feet by four feet, Mr. J. Gray, Uddingston, was an easy first, with 58 points out of a possible 76. The second prize went to Colonel Robertson Aikman, C.B., Hamilton (gr. Mr. R. Macdonald), with 54½ points out of 76, and the third to the Earl of Balfour, with 46½ out of 76. For the smaller display, of nine kinds, on a space four feet by three feet, Mr. D. A. Hill, St. Boswells, was first with 46½ points out of a possible 60. In the amateurs' collection, from which Tomatos were excluded, Mr. D. Lonie, Liberton, was first.

In the other vegetable classes, Mr. J. Gray excelled for Cucumbers, and the other principal prize winners were: Major C. R. Gordon (Savoys, Carrots, Broad Beans and Lettuce), Mr. C. Jenkins (Beet, Shallots and Parsnips), Mr. J. Darling, Kelso, Mrs. Mitchell, Gilmerton, Mr. W. Fyfe, Whittingehame, and Mr. J. E. B. Cowper, Gogar (Potatos); Dyson Perrins, Esq., and Mr. H. Graham, New Lanark (Tomatos); J. Bell Irving, Esq., Mackerston (Onions); and Mr. J. Jarvan, Loughton (Leeks).

Non-Competitive Exhibits.

The following awards were made to Trade exhibits:—

Gold Medals.—Messrs. Austin and McAslan, Glasgow, for vegetables, Gladioli, etc.; Messrs. Dicksons and Co., Edinburgh, for Roses; Messrs. Dobbie and Co., Ltd., Edinburgh, for Dahlias and Roses; Messrs. Cunningham, Fraser and Co., Edinburgh, for shrubs; Messrs. Storrie and Storrie, Glencarse, for fruit trees, etc.; Messrs. John Forbes (Hawick), Ltd., for herbaceous plants, etc.; Messrs. Thyne and Son, Dundee, for herbaceous plants; Mr. T. Robinson, Porchester, Notts., for Roses; Messrs. C. Engelmann, Ltd., Saffron Walden, for Carnations; The Kippen Vinery Company, Kippen, for Grapes.

Silver-Gilt Medals.—The Rt. Hon. the Earl of Home, The Hirsel, for hardy fruit; Mr. John Downie, Edinburgh. for herbaceous plants and Apples; Messrs. Laird and Dickson, Edinburgh, for herbaceous and alpine plants; Messrs. L. R. Russell, Richmond, for Clematis; Messrs. Dobbie and Co., Ltd., Edinburgh, for Fuschias; Mr. W. Wells, junr., Merstham, for herbaceous plants; Mr. T. Smith, Newry, for herbaceous and alpine plants; Carse of Gowrie Nursery Co., Errol, for fruit; Messrs. Isaac House and Co., Bristol, for Scabious; Messrs. Hewitt and Co., Ltd., Solihull, for Gladioli, etc.; Messrs. F. F. Fairbairn and Sons, Carlisle, for Phloxes; Mr. M. Rae, Biggar, for Seedling Begonias; Mrs. Watt, Edinburgh, for a dessert table.

Silver Medals.—Messrs. Allwood Bros., Haywards Heath, for Carnations and Pinks; Messrs. Bakers, Wolverhampton, for herbaceous plants; Messrs. Bannatyne and Jackson, Hamilton, for Dahlias; Mr. A. Forrest, Wilkieston, for Pansies and Violas; Mr. R. Lawrie, Carnwath, for Begonias.

Bronze Medals.—Mr. Peter Aitken, Bathgate, for alpines; Messrs. Maxwell and Beale, Broadstone, for Heaths.

AWARDS OF MERIT.

New Seedling Begonia, *Fire King*, exhibited by Mr. M. Rae, Biggar; Collerette *Dahlia Pitlochry* and decorative *Dahlia Aberfoyle*, exhibited by Messrs. Dobbie and Co., Edinburgh; Coltness *Dahlia Yellow Underwing*, exhibited by Mr. R. J. Lowrie, Cardross Gardens; *Viola Mrs. M. B. Wallace*, exhibited by Mr. Henry Robertson, Kelso; *Violas Mrs. Frank Geddes* and *Mrs. William Thomson*, exhibited by Mr. Hugh M'Coll, Preston House, Linlithgow.

NATIONAL DAHLIA.

September 8.—As we briefly reported in last week's *Gardeners' Chronicle*, the above Society held a successful show at the R.H.S. Hall, Vincent Square, Westminster, on this date, and we now append a fuller account of the exhibition.

OPEN COMPETITIVE CLASSES.

There was only one exhibit in the class for twenty-four Show and Fancy Dahlias, where Messrs. Wm. Treseder, Ltd., were awarded the first prize for an exceedingly good collection of large, shapely blooms of good finish. Their specimens of J. T. West, Rebecca, Dandy and Tom Jones, for example, were admirable. Although there were three boards of twelve varieties the quality in this class was much below that of the former. Mr. A. T. Barnes, Bedford, won the first prize.

In the class for twelve Cactus varieties, six blooms of each, Messrs. James Stredwick and Son found no opponent and were awarded the first prize for an imposing collection of such exhibition varieties as Rev. H. C. Weaver, Harry Stredwick, Supreme and Topsy, of splendid quality. Similarly, Messrs. James Stredwick and Son were awarded the first prize for twenty-four Cactus varieties shown on boards, where their superb collection included blooms of Herbert Blackman, Mammoth, Mrs. A. Harvey and Mrs. W. Jackson.

The quality of the blooms was also excellent in the smaller class, where Mr. W. G. Cramp, Streatham, was first with twelve splendid blooms of such varieties as Mammoth, Edgar Jackson and Valour. Messrs. Wm. Treseder, Ltd., were a good second. The only exhibit of six blooms of one Cactus variety, shown on a board, by Messrs. James Stredwick and Son was deservedy awarded the first prize; they showed six magnificent blooms of the richly coloured Herbert Blackburn.

Especially in view of the interest that is now taken in Cactus Dahlias as plants for garden decoration, the class for twelve varieties of garden Cactus Dahlias was most disappointing, only Messrs. J. Cheal and Sons staged an exhibit, and with one exception their varieties hung their heads in a dejected fashion. But in the class for twelve varieties of Pompon Dahlias, arranged without any support, Messrs. J. Cheal and Sons had a delightful exhibit which, by the way, was more decorative than in the class for similar varieties arranged with any hardy foliage, in which they also won the first prize, though the blooms were equally good. Their chief varieties were Daisy, Rival, Glow, Censor and Madeline. Mr. A. T. Barnes was a very good second in the former class. Messrs. J. Cheal and Sons, the only exhibitors, were awarded the first prize for a pretty collection of single Dahlias.

The blooms of large Paeony-flowered Dahlias showed signs of weather damage, though they were large and shapely. Messrs. J. Cheal and Sons were first, and Messrs. Wm. Treseder, Ltd., were second. The small Paeony-flowered varieties made a pretty display, and in their first prize collection Messrs. Wm. Treseder, Ltd., included beautiful vases of Cherry, Our Annie and Miss M. A. Hay. Mr. A. J. Cobb was a very good second in this class.

Large Decorative Dahlias were popular with the exhibitors and the best of the many collections of six varieties was staged by Messrs. Wm. Treseder, Ltd., who had magnificent blooms of Couronne d'Or, Mable Lawrence and Trentonian. Mr. J. Emberson was a close second and his admirable collection included handsome blooms of Yellow Perfection. Messrs. J. Cheal and Sons were first with a very attractive exhibit of six vases of small Decorative varieties, where Mr. J. Emberson again ran the winner very closely. The very best varieties were Topsy, Lowfield White and Crimson Flag. Messrs. J. Cheal and Sons were easy winners in the class for twelve Collerette varieties, where they showed Ustare, Glen Demon and Mrs. F. C. Stern. The best six varieties were exhibited by Earl Beatty (gr. Mr. A. Barrett), Reigate, who had an admirable collection, including Bonfire and Mabel Mary.

AMATEURS' CLASSES.

Show and Fancy Dahlias did not receive much support in these classes, where Mr. H. Lagden, Shinfield, was awarded the first prize for twelve varieties, and there was no exhibit of six varieties. Garden Cactus Dahlias were better shown than in the open class, and Earl Beatty was first with six Decorative vases of Edith Page, Archibald, Edith Jones and other varieties.

Exhibition Cactus Dahlias were a strong feature of the amateur classes. The first prize collection of nine varieties, three bunches of each, shown by Mr. A. Brown, Leagrave, Bedfordshire, was an excellent exhibit. His chief varieties were Edgar Jackson, Edith Page and Mrs. A. Harvey. Mr. W. G. Cramp was a good second. The six varieties in bunches of three blooms, shown by Mr. A. T. Barnes, were also excellent. He included blooms of Edgar Jackson, S. J. Jones and Edith Page. Earl Beatty was second in this strong class.

The twelve Cactus varieties, shown on boards, which won the first prize for Mr. W. G. Cramp, were magnificent specimens. Mr. F. Chennells, Wheathampstead, was first with six varieties and with three blooms each of four varieties, where he had admirable blooms of Mrs. A. Harvey, Champion and Mrs. W. Jackson.

Pompon Dahlias were delightful examples of this dainty little type. Mr. A. T. Barnes showed the tiniest blooms imaginable and of perfect shape and colouring. His twelve varieties, six blooms of each, included Nerissa, Little Beeswing and Bacchus. Mrs. Courage was a good second. Mr. H. Brown, Luton, who was first with six varieties also had a very fascinating exhibit, and Mr. C. Luckin, East Grinstead, was a worthy second. Showing six good varieties Mr. Luckin was first in the class for Star Dahlias.

In the classes for amateurs who had never won a first prize at the Society's shows, Mr. T. E. Whish, Kimpton, was a very successful exhibitor with admirable blooms, while Mr. F. Chennells excelled in the classes for amateurs who do not employ any paid assistance.

The Floral Division was especially attractive and contained many tasteful exhibits. There were many dinner table decorations where Miss A. L. Jones, Highgate, was first with mixed varieties in the class for Star Dahlias with Mrs. C. H. Tisdall second for a light and graceful decoration of Charlwood Star Dahlias. In the class for any other types of Dahlias Mrs. Courtney Page, Enfield, was first with a charming arrangement of Miniature Paeony variety Picture arranged with foliage of Nigella and Hypericum. Mr. A. J. Cobb, Shinfield, was second with a table of Mrs. W. M. Childs. Mr. Cobb won the first prize with a delightfully arranged vase of Paeony-flowered Dahlias and foliage, and also had the best bowl of any varieties. Mrs. Wm. Yandall was first with a lovely vase of Dahlias and foliage.

The class for the three vases or bowls of Dahlias suitable for the decoration of a sideboard or hall table was again very successful, and Mr. J. Emberson won the first prize with a very artistic exhibit, with Mr. W. Yandall second. In the Ladies' Classes Miss Woolven was first with a handsome basket of Dahlias.

Only one exhibit was entered for the Monro Challenge Cup which was awarded to Messrs. Wm. Treseder, Ltd., for an imposing collection of artistically arranged floral designs suitable for all occasions.

NON-COMPETITIVE EXHIBITS.

An extensive collection, principally of Collerette varieties was exhibited by Messrs. Dobbie and Co. This was stated to be composed solely of varieties raised by themselves, and it was worthy of the greatest admiration no less for the quality of the blooms than for the beauty of the varieties. Their Collerette varieties included Glen Sannox, Holywood, Lochnagar, Kona, Gloriosa, Dunrobin, Tuskar and Scarlet Queen (Large Gold Medal).

A very charming display was made by Mr H. J. Jones with excellent spikes of Delphiniums and Kniphofias associated with particularly good Dahlias of great decorative value. This large collection was arranged in gilt baskets each a perfect decoration in itself (Gold Medal).

The large Decorative varieties were prominent in the well arranged collection of Mr. Jas. B. Riding who had Aristocrat, Noble, Talisman, Jersey Beauty, Adler and Verdun of this type and also staged many desirable blooms of the others (Gold Medal).

In an interesting group, Mr. J. T. West displayed a great variety of the fascinating small Paeony-flowered varieties. These included Caliph, Pink Pearl, Neville, My Fancy and Tangerine. In addition to these, the other types were also well represented (Gold Medal).

A large representative collection of Dahlias was arranged by Messrs. J. Cheal and Sons, and along the front they set out many baskets of the useful Mignon varieties. These included Ethel, Grace, Etna, Roy, Daphne, Lancer, Janet and Julius (Gold Medal).

Silver-gilt Medals were awarded to the following. Mr. J. Emberson, who had an admirable collection in which General Smith-Dorrien, Edgar Jackson, Border King, Patriot and Mary Purrier of the Cactus varieties were excellent. Messrs. Jarman and Co. had an artistic display, chiefly of A. G. Amos, Mary Purrier, Barbara Jacobs and Edgar Jackson of the Cactus type; and to Messrs. Carter Page and Co. for a comprehensive collection of a great many varieties, mostly of those of value for garden decoration and as cut flowers. Messrs. Waterer Sons and Crisp and Mr. H. Hemsley were awarded Silver Medals for interesting and valuable collections of Dahlias.

TRADE NOTE.

A few days ago Messrs. W. Power and Co., of Waterford, were honoured by a visit from President Cosgrave, who, after inspecting the nurseries, planted a Eucalyptus to commemorate his visit.

Obituary.

Lt.-Col. Sir George Holford, K.C.V.O., C.I.E.—The news of the death of this distinguished patron of horticulture will be received with profound regret by gardeners everywhere, not only in this country but abroad; it is no exaggeration to state that this typically English gentleman did more during his lifetime to uphold the high prestige of British horticulture than any of his contemporaries. Himself the son of a famous gardener, he succeeded to one of the finest gardens in Great Britain and added thereto many fine features. The pleasure grounds of his Gloucestershire estate, which were mainly laid out by his father, he maintained with such skill and care that there are few to equal them in the country. Many of the Conifers and rarer exotic trees have grown into magnificent specimens and at few other places can there be seen such a varied or interesting collection of arboreal vegetation. The glass-houses at Westonbirt are filled with a wealth of rare and beautiful indoor plants, especially Orchids, of which Sir George had one of the finest collections in existence. Equally famous were his Hippeastrums (Amaryllis), Clivias and greenhouse Rhododendrons. Sir George Holford was born on June 2, 1860. He was educated at Eton in 1873 and left that famous school in 1877. In 1880 he joined the 1st Life Guards and remained with that distinguished regiment until 1908 when he retired with a brevet lieutenant-colonelcy. In 1884 he was appointed Equerry to the late Duke of Clarence, and his connection with the Court continued to the end, for at his death he was extra Equerry to King George. In 1912 he married the widow of Mr. J. Graham Menzies. Lady Holford is a daughter of the late Mr. Arthur Wilson, of Tranby Croft. For very many years Sir George had been prominently associated with the Royal Horticultural Society, on the Council of which he served, and he was one of the most regular attendants at the R.H.S. meetings. The tall, handsome figure of Sir George, and above all his graciousness, will be sadly missed at Vincent Square, for this perfect courtier was one of nature's gentlemen, dignified, yet the personification of kindness and consideration for others. Of a somewhat shy and retiring disposition, he could never be persuaded to accept any of the high offices of the Society that would have entailed publicity, which he studiously avoided. As the writer of his Obituary notice in *The Times* states, "his wide popularity, both in town and in country, with the humble as with the great, rested neither on his talents nor his possessions. It came from the influence of a sweet and pervasive personality of which everyone felt the fascination." By the death of Sir George Holford the Royal Family has been deprived of a friend, horticulture of an enthusiastic and critical patron, and the world of a perfect gentleman. The funeral took place at Westonbirt on the 14th inst. The service was conducted by the Rev. F. C. Timins, the Rector, assisted by Canon Wilson. Captain Sir Charles Cust, R.N., represented the King, and Lt.-Col. F. R. Durham the Royal Horticultural Society.

Richard Kinggett.—We regret to record the death of Mr. Richard Kinggett on the 28th ult., a prominent member of the Guildford Gardeners' Association. He was an amateur member of the association and served on the committee, *ex officio*, by virtue of his work as secretary to the lecture and outings sub-committee. In this capacity Mr. Kinggett found scope for his peculiar talent for organisation, and brought to his work his characteristic efficiency for details. The whole of the Association's monthly lectures during the past three winters and outings in the summer were arranged by him, and his work in this direction has materially contributed to the success and rapid growth of the Association. He touched the social life of Guildford at many points and spent himself in endeavouring to promote the happiness of other people. His death is a distinct loss to the town. He was buried at Stoughton (Stoke Cemetery) amidst widespread manifestations of regret. Mr. Hebbourn, Mr. Binfield and Mr. Blunden, representing the Guildford Gardeners' Association, were present at the funeral.

Hosea Waterer.—Mr. Hosea Waterer, who succeeded to the ownership of Knap Hill Nursery Woking, on the death of his brother Anthony, in 1924, died on Saturday, the 11th inst. in his 74th year. He was the son of Anthony Waterer, Senr., son of Hosea Waterer who became proprietor of the nursery on the death of his father, Michael Waterer, by whom the business was established. The late Mr. Hosea Waterer settled in America some forty-four years ago and established a nursery and seed business at Philadelphia. He married an American lady who predeceased him eleven years ago. His remains are being taken to America by the s.s. Carmania on the 18th inst. and will be interred in his wife's grave. He leaves two sons, Anthony and Harry. An account of the famous Knap Hill Nursery was published in our issue for June 6, 1925.

ANSWERS TO CORRESPONDENTS.

BEGONIAS UNHEALTHY.—*C. S.* The swellings on the stem and roots of your Begonias are caused by eelworm, Heterodera radicicola, which also affects Tomatos and Cucumbers. The soil in which the plants are grown should be discarded or sterilised and affected plants destroyed.

ELM UNHEALTHY.—*H. C.* No disease was apparent on the leaves sent. The trouble is probably to be found in some wrong condition at the roots.

NAMES OF PLANTS.—*Subscriber.* The Rose was shattered when it reached us, but we believe the variety is Koster's Orleans.

PHLOX FAILING.—*W. R.* Your Phloxes are attacked by eelworm disease. The only safe procedure is to lift the plants and destroy them by burning. New stock should not be planted in or near the diseased area.

PRUNING LAVENDER.—*A. M.* The best time to prune Lavender is immediately after the spikes are cut in August, but you could do it now with safety. If you wish to cut the bushes hard back, this work should be done about the end of March or early in April, but it is doubtful whether the plants would produce more than an occasional flower spike or so the same season after pruning.

VIOLAS FAILING.—*W. V.* No fungous or insect pest could be found in the specimens sent for examination. We suspect the trouble is due to wrong cultural treatment, and think that an artificial manure has been used in excess.

VINE LEAVES TURNING YELLOW.—*B. H.* No disease could be found in the vine leaves you sent. We suspect the trouble is due to the combined effects of sunshine and moisture causing scorching.

WINTER WASH FOR FRUIT TREES. *P.* A good make of tar distillate wash, such as Carbokrimp or Mortegg is suitable. This should be applied when the trees are absolutely dormant, and the maker's instructions followed very carefully with regard to strength, particularly for tender subjects such as Peaches. If something less drastic is preferred, or if there are crops under the trees that are liable to be scorched, use lime-sulphur instead, diluted with water to a strength of one part in fifteen.

Communications Received.—A. K.—A. S.—F. F. B. H.—C. M.—H. S.—J. E.—H. C.—B. B.—Dr. R. F. S. (India)—A. R.—H. G. D.—W. T.—E. J. P.—J. B. W.—R. E. H.—C. W. A.—K. L.—A. O. M. (Thanks for £1 12s. for R.G.O.F. Box.

MARKETS.

COVENT GARDEN, Tuesday, September 14th, 1926.

Fruit: Average Wholesale Prices.

	s. d. s. d.
Apples, English—	
cases	— -25 0
—Worcester Pearmain, ½-sieve ...	4 0-10 0
—James Grieve, ½-sieve ...	4 0—8 0
—Lord Derby per bushel ...	6 0-10 0
—Grenadier, per bushel ...	5 0—9 0
—Lane's Prince Albert, bush.	4 0—8 0
—Sterling Castle bush. ...	4 0—8 0
—Tyrolean ...	10 0-16 0
—Australasian Sturmer ...	14 0-18 0
—Californian Gravenstein ...	14 0-16 0
Apples, Italian, per box ...	7 0-10 0
Bananas ...	11 0-22 6
Figs, forced, per doz.	4 0-15 0
Grape Fruit—	
Cape: per case	20 0-25 0
Isle of Pine ...	—30 0
Grapes, English Black Hamburgh, per lb	1 0—2 6
—Canon Hall...	3 0—6 0
—Gros Colmar	1 6—3 0
—Alicante ...	1 3—3 0
—Muscat ...	2 0—7 0
Lemons, Messina, per case ...	14 0-20 0
—Naples ...	18 0-20 0
Melons—	
—Canteloup ...	2 0—7 0
—Others ...	1 0—5 0
Nectarines ...	6 0-24 0
Oranges—	
—Californian ...	20 0-24 0
Peaches, Belgian, per doz. ...	2 0—6 0
—English per doz.	4 0-12 0
Pears—	
—Californian Beurré Hardy ½-cases ...	10 0-12 0
cases ...	20 0-22 6
—French Beurré Hardy,	2 6—4 0
—finest, 64's to 90's	6 0-10 6
—Tyrol	8 0-12 0
—ordinary ...	3 0—4 0
—Common Belgian, cwt. ...	4 0—5 0
Pines	2 0—4 0
Plums, English—	
—Monarch ...	5 0—8 0
—Pond's Seedling	5 0- 8 0
—Greengage ...	2 6—4 0
—Damson ...	5 0—6 0
Plums—	
—Dutch ...	3 0—4 0

Vegetables: Average Wholesale Prices.

	s. d. s. d.
Beans—	
—Runner, bush.	3 6—5 0
Beets, per cwt.	5 0—6 0
Cabbage, per doz.	1 6—2 0
Carrots, per ½ bag ...	4 0—4 6
Cauliflowers, per doz.	2 6—4 0
Cucumbers, per doz.	3 0—4 0
—Flats ...	8 0-14 0
Horseradish, per bundle ...	1 6—2 0
Lettuce, round, per doz. ...	1 0—1 3
Marrows, tally	6 0—7 0
Mint	2 0—3 0
Mushrooms	
—cups ...	3 0—4 0
—Broilers ...	2 0—2 6
—Field... ...	0 9—1 3
Onions—	
Valencia ...	8 0-10 0
Parsnips, per cwt. ...	5 0—6 0
Potatos—	
—King Edward per cwt. ...	5 0—6 0
—others ...	4 0—4 6
Spinach, per bushel ...	3 0—4 0
Sprouts Brussel's per ½ bag ...	3 0—5 0
Tomatos—	
—English, pink	2 6—4 6
—pink and white	2 5—4 6
—blue ...	2 0—3 0
—white ...	2 0—3 0
—Guernsey ...	2 6—3 0
—Jersey ...	2 0—3 0
—Dutch ...	2 0—3 0
Turnips, per cwt.	5 0—7 0

REMARKS.—Business has been good during the past week. A fair volume of produce is being handled, and except for one or two important sections, prices have not been unduly low. English Apples are not plentiful, and good specimens of both dessert and cooking varieties are asked for. Imported Apples are also selling well; supplies are arriving from California and various parts of the Continent. Home-grown Pears are not generally good although fairly plentiful. Some excellent Californian grown fruits of Beurré Hardy are selling well. Ample supplies of common varieties of Pears are arriving from Europe. Hothouse fruits, such as Grapes, Peaches, Nectarines, Figs and Melons are in steady demand with no change in prices from last week. English Tomatos are plentiful and cheap, in fact, too cheap to be a remunerative commodity for the producer. Tomatos from Holland, Jersey and France are in ample supply. The Cucumber trade is inclined to improve. Forced Mushrooms are scarcer, and field Mushrooms are selling at comparatively high prices. Salads are now getting popular. Batavian Endive from France is selling well. Green vegetables are a moderate trade, and business in old Potatos is steady.

GLASGOW.

Fruit supplies which were on the short side last week had the effect of restricting business and strengthening prices. A temporary scarcity of American Apples was reflected particularly in barrelled fruit, but as heavy shipments are due to begin next week, an early return to normal conditions is expected. Bonham advanced to 46/-, while Gravenstein were worth from 17/- to 19/- per case, and Jonathan from 21/- to 22/-. Plums sold readily at firm prices, Victoria making from 5d. to 8d. per lb; Whitcorn, 3d.; Coe's Golden Drop, 4/6 per chip; Belle de Louvain, 4/- to 4/6; Egg, 3/6 to 4/-; and Prune Damsons, 9/- half-bushel. English cooking Apples were cheaper at 5/6 to 8/- per half-barrel. Bronze Melons sold at 9/- to 11/- per case; Pomegranates at 12/- to 14/-; South African and Californian Oranges at 24/- to 30/-. Prices for Black Eureka Pears ranged from 14/- to 16/- half-case; Anderson, 24/- to 26/- per case; Conference, 9/- to 10/- per sieve, and Hazel, 12/- to 15/- per keg

The cut flower market continued quiet and dull in tone Chrysanthemum sprays brought from 2d. to 5d.; disbudded blooms, 9d. to 1/3 for 6's; Gladioli, 1/3 to 2/- per dozen; Carnations, 1/- to 1/4 per dozen; red and white Roses, 1/- to 2/-, and pink Roses, 1/6 to 2/6 per dozen; Lilium longiflorum (Harrisii), 2/- per bunch; Asters and Sweet Peas sold for 1d. to 2d.; Gypsophila, 4d. to 6d.; Smilax 1/-; and Asparagus, small, 6d. to 9d.; large, 9d. to 1/6.

Scotch Tomatos were dearer at 6½d. to 8½d. per lb.; Guernsey Tomatos realised 3½d. to 4d., and Dutch Tomatos, 2½d. Prices for Cauliflowers were firm at 2/- to 5/- per dozen. Cucumbers were worth 1/6 to 4/-. Lettuces 1/6 to 2/-, and French Beans, 5d. to 6d.

THE
Gardeners' Chronicle
No. 2074.--SATURDAY, SEPTEMBER 25, 1926

CONTENTS.

Alpine garden—
  Eomecon chionantha 247
  Trifolium alpinum... 247
Antipodean visitors ... 242
British Mycological Society 241
Certificates for market plants and flowers... 241
Chrysanthemums, early-flowering 242
Clayton, Mr. E. ... 242
Conifers for the rock garden, dwarf ... 243
Daffodil names, classified list of 241
Ferns, hardy—
  Onoclea germanica 246
Fish as manure ... 253
Florists' flowers—
  Border Carnations... 248
Flower garden—
  Montbretias ... 246
Fruit crops, remarks on the condition of the 252
Fruit garden—
  Gooseberries ... 253
Fruit-pickers, strike of 242
Fruit trees, on pruning 241
"Gardeners' Chronicle" seventy-five years ago 243
Gardeners' orphans, help for 241
Gentians, some of the newer 247
Glasnevin, notes from 249
Hardy flower border—
  Chrysanthemum maximum Robinsonii 246
  Echinacea purpurea The King ... 246
  Helenium Madame Canivet 246
  Linum arboreum ... 246
Indoor plants—
  Hardiness of Bougainvillea and Plumbago ... 248
  Isoloma hirsutum ... 248
Jefferies, Richard ... 241
Lilies in the United States 251
Lilium philippinense var. formosanum ... 252
Obituary—
  Leon Diguet ... 259
  Oclee, H. G. ... 259
Paris autumn exhibition 241
Parks and gardens, public 252
Phytelephas macrocarpa 242
Plants new or noteworthy—
  Cedrus Libani decidua 248
Potato blight in Scotland 242
Seed-testing in Holland 242
Societies—
  Cardiff and County Horticultural ... 258
  Lancaster Shows ... 258
  London Allotments and Gardens ... 259
  Manchester and North of England Orchid 259
  Morecambe Horticultural 258
  National Chrysanthemum 258
  Royal Caledonian Horticultural ... 259
  Royal Horticultural 254
  United Horticultural Benefit and Provident 258
Soudan, increasing native cultivation in the 243
Van Fleet Medal, award of the 241
Vegetable garden—
  Cauliflowers and Broccoli all the year round ... 253
  Early Turnips ... 253
Week's work, the ... 244
Wisley, notes from ... 249

ILLUSTRATIONS.

Clayton, Mr. E., portrait of 242
Gentiana Froelichii, 246; G. prolata, 245; G. sikkimensis, 247; G. stragulata 247
Lilium regale in America, a field of 251
Lilium sulphureum at Glasnevin 249
Pontederia cordata at Glasnevin 243
Wigan Cup for Roses 255

Average Mean Temperature for the ensuing week deduced from observations during the last fifty years at Greenwich, 54.5.

Actual Temperature—
The Gardeners' Chronicle Office, 5, Tavistock Street, Covent Garden, London, Wednesday, September 22, 10 a.m. Bar. 30.5. Temp. 56°. Weather, Fine.

On Pruning Fruit Trees. It only needs to inspect the well-grown and beautifully-trained Apples and Pears which are such an ornament to the well-kept garden, to realise that there are many adepts in the art of pruning. But it is no less true that for one such garden there are to be seen dozens in which the fruit trees are misshapen, badly pruned and less fruitful than they should be. Nor is it easy to supply instructions which might, if acted upon, remedy the state of affairs. For the more a man knows about pruning the more he is disinclined to lay down general precepts. Stock, variety, soil and other circumstances alter pruning cases, and a system which applies well to a strong-growing variety is not applicable to one of weak growth. Nevertheless, there are at present experiments under weigh at East Malling which point to a method of pruning Apples, and perhaps Pears, which may be calculated to give average good results. The process may be called the "regulation and long pruning" method. It applies to Apples, though we can see no reason why it should not be tried also on Pears. The system is one of winter pruning and does not involve summer pruning, though we think that with modification it might be practised by the summer pruner also. Regulation, of course, consists in the outright removal of superfluous wood, and that certainly should be left until growth has ceased. Long pruning consists, in the case of winter pruning, of shortening the shoots to five eyes. In the following year a similar shortening is practised and continued, indeed, until a *plump* fruit bud is discoverable somewhere towards the base of the shoot. A mere fruit bud will not do. It must be a plump one. When the bud is there spur pruning is practised, that is, the shoot is shortened to a point just above the plump fruit bud. In the case of summer pruning, it would be worth trying a shortening—needless to say, at the right time, that is, when the vigour of growth shows signs of declining—to seven leaves, counting the rosette of basal leaves as one. The summer pruning would have to be supplemented by a winter process in which the shoots are reduced to five eyes, or if buds below the fourth have broken into shoots, to below the largest of these buds. The East Malling experiments made with numerous varieties of Apples show conclusively the futility of leaving the trees unpruned. They show weak growth and poor crops, and they show the superiority of the method of regulation and long spur pruning over the short spur pruning so frequently practised. Cutting to three or four eyes has, of course, many advocates, and it would be rash, at present, to say that the method of leaving longer shoots is better; but, on the whole, we are inclined to think that it will prove to be better. Everyone must have observed how Pears growing in strong soil and consistently pruned to three eyes are year after year burdened with excessive and by no means fruitful growth. For our part, we think that Pears in private gardens suffer more than they gain by the short system of summer pruning which is so generally adopted. In any case, we are now putting in practice the experience which the East Malling experiments provide, and shall hope, in spite of the disappointment of the last few years under the system of short summer pruning, to be able to report an increase of fruitfulness as a consequence of the adoption of the long system. For there is nothing more disappointing in a garden than to see year after year no plant growing more vigorously than the Pear, and none giving such a niggardly yield.

Classified List of Daffodil Names.—The Council of the Royal Horticultural Society has decided to revise the *Classified List of Daffodil Names* and publish a new edition so soon as possible. The last edition was published in 1923. Raisers of Daffodils who have not yet registered the names of new varieties are requested to do so at once so that these may be incorporated in the new issue. The names, with classification and name of raiser, should be sent to the Registrar, Mr. Charles H. Curtis, 5, Tavistock Street, Covent Garden, W.C.2. The registration fee is 1/- for each variety.

Richard Jefferies.—The Town Council of Swindon has decided to purchase the small farm-house and land at Coate, about one-and-a-half miles from Swindon, which was the birthplace of Richard Jefferies, who has been described as one of the founders of "Nature Study." Jefferies was a great observer of nature and he is said to have discovered the beauty of the Downs and the hanging wood of the chalk escarpment which are the characteristic features of the country he loved so well.

Award of the Van Fleet Medal.—The American Rose Society has awarded the Van Fleet Medal to Dr. William Saunders, formerly of the Canadian Government Experimental Farm at Ottawa, for raising the new Rose named Agnes. The D. Walter Van Fleet Medal is in memory of the famous rosarian, and is presented by Mr. and Mrs. Moses Lyman, of Longmeadow, Massachusetts, through the American Rose Society, for the production by an American, in America, of an outdoor Rose deemed worthy of the honour by the Executive Committee of the Society.

Help for Gardeners' Orphans.—Mr. Albert O. Marshall of Ossington Hall Gardens, Newark-on-Trent, has forwarded us the sum of £1 12s. for the Royal Gardeners' Orphan Fund box, being the amount collected from visitors on the occasion of the gardens at Ossington Hall being thrown open to the public when the Newark Gardeners' Society visited Ossington Hall. Mr. Marshall suggested this form of helping the R.G.O.F. to his employer, Lady Elinor Denison, who readily gave her consent. Mr. Marshall's example is a worthy one for other gardeners to emulate.

Paris Autumn Exhibition.—The autumn exhibition organised each year in Paris by the Société Nationale d'Horticulture de France will take place this autumn at the usual place, Cours la Reine, from September 29 to October 5. The chief exhibits will be Chrysanthemums, fruits and fruiting trees, flowers, and seasonable vegetables.

Flowers in Season.—Messrs. Kelway and Son have forwarded spikes of some excellent varieties of Gladioli. Of the large-flowered type, British Lion, a strong spike of big, rich red blooms; Beau Brocade, puce with brocade markings and yellow and white lip; and Perfect Peace, white with purple staining, are exceedingly good, while of the Primulinus hybrids notable sorts are Early Morn, flame colour, and G. Gordon, tangerine colour.

Certificates for Market Plants and Flowers.—We are asked to remind readers that a special committee of the British Florists' Federation is willing to consider the merits of plants and flowers believed to be suitable for market purposes, and to award Certificates to worthy subjects. The members of this committee are all connected with the flower and plant trade of Covent Garden and meet only as necessary. Exhibitors who propose to submit plants or flowers to the judgment of this committee must notify the Secretary, Mr. C. H. Curtis, 5, Tavistock Street, Covent Garden, W.C. 2., of their intention to do so not later than first post on a Friday in the week preceding a meeting of the Royal Horticultural Society. Plants or flowers submitted (after notification) must be brought to Messrs. George Monro's salerooms, 4, Tavistock Street, Covent Garden, by 11.30 a.m., on a Monday immediately preceding a meeting of the R.H.S.

British Mycological Society.—The thirtieth autumn fungus foray and annual general meeting of the British Mycological Society will be held at Hereford from Monday, September 27, to Saturday, October 2, 1926, in conjunction with the Woolhope Naturalists' Field Club. Headquarters will be at the Green Dragon Hotel, Broad Street; rooms may also be obtained at the Mitre Hotel, Broad Street. The programme is as follows: Monday, 8.15 p.m., short Council meeting in the Hotel. All other meetings will be held in the Free Library, Broad Street, where specimens will be shown. At 8.45 p.m. the annual general meeting of the Society will be held. Tuesday: start from the Green Dragon at 10 a.m. for Credenhill and Wormesley. In the evening, Dr. G. H. Pethybridge will deliver his presidential address on "Mycology and Plant Pathology." Wednesday: start at 11.30 a.m. for Dinmore. At 8.30 p.m., a popular lecture on Fungi will be given by Mr. J. Ramsbottom, to which the public will be invited. Thursday: start at 11.30 a.m. for Moccas Old Park. At 7.30 p.m. the members will dine with the Woolhope Naturalists' Field Club, by kind invitation. Friday: start at 11.30 a.m. for Mordiford (Haugh Wood) and Holme Lacy. At 8.30 p.m., exhibit by the President: "A new Potato tuber rot." Paper by Dr. Malcolm Wilson and Mr. J. S. L. Waldie on "Some Fungi occurring on leaves of Conifers." Further particulars may be obtained from the Secretary, Mr. J. Ramsbottom, British Museum (Natural History), Cromwell Road, S.W.7.

Honours for French Horticulturists.—All who have visited Le Havre and admired the beautiful grounds under the control of the town authorities, will be pleased to hear that the title of Chevalier de la Légion d'Honneur has been bestowed upon M. Henri Cayeux, the Director of the gardens and promenades. A similar honour has also been awarded to Professor Paul Parmentier, of Besançon, who is President of the Société d'Horticulture du Doubs, and to M. Charles Rollot, chief of the Agricultural Service in Tananarivo, Madagascar.

Antipodean Visitors. — Two horticulturists from the Antipodes were visitors to the show in Holland Park Hall. One was Mr. Ward, Superintendent of the Sydney Botanic Gardens, who also acts on behalf of the Australian Government in regard to the crops of Kentia seeds on Lord Howe's Island. The other visitor was Mr. Wright, from Auckland, New Zealand, whose enthusiasm is very refreshing. Both Mr. Ward and Mr. Wright are British born, but have spent the greater part of their lives in their adopted countries.

Strike of Fruit Pickers.—Many of the fruit gatherers in the Aylesbury district are on strike for higher pay. The present rate is 4d. per skip. The workers have refused the employers' offer of 6d. and refuse to work unless they are paid 8d. per skip.

Potato Blight in Scotland.—The Board of Agriculture's report on the condition of the Potato crop states that Blight (Phytophthora infestans) is prevalent to a greater or lesser extent in almost every part of Scotland, particularly in Perthshire and the south-eastern districts. In a few northern and south-western areas, however, the crop is reported to be quite clean and healthy, while in many districts elsewhere the disease has not gone so far as seriously to affect the yield estimates made in July. From south-east Perth it is reported that many farmers have lifted part of their crop on account of the disease. In north Argyll second growth is stated to have occurred after the heavy rain that fell towards the end of August, while in Skye the tubers have proved in some cases to be soft. Reports show, however, that in eighteen districts yields varying from five to ten per cent. above the average are expected, and it would appear probable that after allowing for the indifferent condition of the crop where it is badly affected by blight, the yield for the country as a whole will show little variation from the normal.

Seed-Testing in Holland.—The State Agricultural Institute at Wageningen, Holland, has just issued the 1926 list of recommended varieties of agricultural produce. This is the third such list which has been issued, and it differs from the preceding ones in that it contains more information, and that more use is made of abbreviations. Thus the single letter "R," indicates "Registered by the Institute of Plant Investigation." Full information is given as to each variety registered, including the name of the raiser, and it is evident that every care has been taken to make the list a useful one to practical farmers. Four categories are employed: the first list contains varieties definitely registered, *i.e.*, recommended by the Institute; the second, those considered to be worth trying: the third, quite new varieties, or new to Holland; and the fourth consists of varieties taken off the list; the reason is not given, but it may be supposed that they have not come up to expectations. Growers who have made use of the seeds recommended by the Institute are encouraged to report the results obtained and to make observations as to the characteristics displayed by the varieties; thus the information kept by the Institute at the disposal of Dutch farmers is always up-to-date, and is the result of actual experience in the field, as well as of observation and experiment under trial conditions.

Legacy to a Gardener.—Amongst the legacies in wills recently proved we are pleased to see one of £500 from the late Mr. Vernon Berbow, of Torquay, South Devon, to his gardener, Mr. Henry Dyer.

Mr. E. Clayton.—Considerable power of organisation, a capacity for grasping details and a genial personality are needed to bring into being and then to conduct a great flower show. Mr. E. Clayton, a Town Councillor of Southport, and Chairman of the Southport Flower Show Committee, is the fortunate possessor of these qualities and adds thereto an unlimited capacity for strenuous effort and the genius for inspiring others with his enthusiasm. It was Mr. Councillor E. Clayton who had to place before the members of the Corporation a considered plan for the Southport Show and to convince his colleagues of the desirability of a high class horticultural attraction for their sunny town. In all this he was successful because, having visited the Chelsea, Shrewsbury, York, Holland Park Hall, Wolverhampton and other large shows, he was able to convey to his colleagues a realistic impression of a great horticultural function. Having convinced the Aldermen and Councillors, they at once made him Chairman of the Show Committee; that he was able to deal satisfactorily with the multitude of matters that the organisation and management of a great flower show entails is amply demonstrated by the initial success that attended the first show and the great advance seen in the two that have followed. Few, if any, men have achieved so great success in horticultural organisation as Mr. Clayton, and his success is the more wonderful in that until about four years ago he had no knowledge of the subject. His love of flowers and Southport is so evident in all he does that it has won for him the deep regard and esteem of all who exhibit at Southport Show.

MR. E. CLAYTON.

Forthcoming French Horticultural Exhibitions.—The Northern France Horticultural Society is organising an exhibition of Dahlias, plants and flowers in season, fruits and vegetables, to be held at Lille from September 30 to October 4, and on October 29, 30 and 31 an exhibition of a similar character will take place at Amiens.

Early - flowering Chrysanthemums. — The National Chrysanthemum Society has made arrangements with the Royal Horticultural Society to hold an exhibition of early-flowering Chrysanthemums on the occasion of the fortnightly meeting at Vincent Square on Tuesday, October 5. Four classes have been provided, two open and two for amateurs only; the former are for twelve varieties disbudded, and a similar number not disbudded; while the amateurs' classes are for six varieties, disbudded and not disbudded respectively. In the open classes the prizes are Gold, Silver-gilt and Silver Medals; in the amateurs' classes, Silver-gilt Large Silver and Small Silver Medals. Entries. are open only to members of the N.C.S., and should reach the Secretary of that Society, at 5, Tavistock Street, Covent Garden, W.C.2, not later than first post on Monday, September 27.

French Horticultural Congresses in 1927.—The Congress Committee of the Société Nationale d'Horticulture de France, at its sitting on July 1, passed a resolution recommending the Society not to hold a general Congress in 1927, but to invite the French Rose Society ("Les Amis des Roses") to arrange their own Conference in Paris in May, 1927, so as to coincide with the Paris Spring Show, and similarly to suggest that the Pomological Society and the Chrysanthemum Society should hold theirs in November, 1927, at the same time as the Paris Autumn Exhibition. It was further suggested that these Conferences should be international in character, similar to the Centenary Congress organised by the Société Nationale d' Horticulture de France.

Phytelephas macrocarpa. — The French Colonial Ministry has issued an interesting little pamphlet[*] embodying the observations made by M. F. Claës, who recently paid a visit to Colombia to investigate the conditions of growth of Phytelephas macrocarpa, a Palm indigenous to the country, of which the fruits are used as a substitute for bone, notably in the manufacture of buttons. The Palms have not up to the present, been made subjects for actual cultivation in plantations, and it is therefore necessary, if such plantations are considered, to ascertain the conditions in which the trees grow to the best advantage in their natural state. M. Claës found that in the region known as "Rebozo," between the Rio Claro and the Rio Cocorna (Lower Magdelana), the soil, of alluvial origin, is very clayey, but is mixed with a large quantity of pebbles which help to make it permeable. This region is covered with virgin forest, including vast natural colonies of Phytelephas macrocarpa. The ground is uneven, but it would appear that the greatest elevation does not exceed 400 metres above sea-level, though the Palm has been observed in Upper Magdelana at a height of 800 to 900 metres. It is, however, for low-lying and humid districts that Phytelephas shows a preference. In the interior of the forest the day-temperature is on an average 35°C., but frequently falls at night to 20° to 22°C. A partially veiled light is also one of the Palm's requirements. The young seedlings of "Corozo" (as it is locally called) are pretty and graceful; they spring up in thousands, but in a short time three-quarters of them disappear, being crowded out by the most vigorous, which alone survive. Normally, the distance between the fully-grown specimens in full production varies from three to six metres; where the space is less the trees appear to be unduly crowded. As regards the difference between male and female plants, the mode of growth is identical for the first few years; but after the first flowering period—which occurs at about five to six years of age—the male Palms are distinguished by a very straight trunk, sometimes five metres in height, crowned by a superb foliation, whereas the trunk of the female Palm becomes bent, probably by reason of the weight of the fruit carried. This disadvantage might be obviated under cultivation by allowing plenty of space between them, so as to encourage a sturdy growth of trunk in the female specimens. If the young plants were raised in a nursery, the right time to transplant would probably be at the period of the first flowering. As the sex of the trees would by that time be known, arrangements could be made to plant in proper proportion—twenty-five males to two-hundred-and-twenty-five females would probably be sufficient to ensure proper fertilisation. In Colombia, the principal flowering time occurs in April and May. The male inflorescence consists of long, thick, creamy-white catkins, four or five in number, each sixty to ninety centimetres in length, and seven to nine centimetres in diameter. When fully in flower the trees yield a subtle and agreeable perfume, which attracts large numbers of bees and other insects. The female inflorescence, the colour of which resembles that of the male flowers, is also finely scented. The peduncle is short and often very difficult to discern among the mass of dead leaves which accumulates round the leaf petioles to the extent of almost concealing the "heads" of fruit. This accumulation must make fertilisation very difficult, and is doubtless the reason why so many of the Palms carry only four to six fruits instead of the normal number of at least ten. The mass of litter on the ground also makes the harvesting of the fruits tedious and dangerous, the danger lying in the presence of the snakes which abound in these localities, and which find shelter in the leafy detritus. The method of harvesting the fruits is as follows: Each closely-set agglomeration of drupes is permitted to detach itself naturally from the receptacle, which usually occurs after the first heavy rains. There are six to twelve drupes in each fruit, a drupe containing four to six "nuts" or seeds. When complete maturity is reached, the drupes fall and break—there is no regular line of dehiscence—and the nuts are exposed, each wrapped in a fleshy mesocarp about a centimetre thick, slightly sweet and faintly perfumed. This perfume quickly attracts a species of rodent locally called a "niéqué," which feeds ravenously on the mesocarp, leaving the nuts absolutely clean, after which the harvest can be gathered. The nuts are collected, dried in the open air (sheltered from rain and sun, and turned over occasionally) for three or four months, and then decorticated by breaking the shell with a small mallet. The nuts are then left to dry for a few days more, and the produce is ready for export. It is calculated that on a well-managed plantation, each tree should produce a minimum of eight fruits, or "heads" a year, furnishing a total of 250 to 300 seeds, which would give a weight, at thirty-five grammes per seed, of eight to ten kilos per Palm.

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[*] *Quelques Données Utiles sur le Phytelephas macrocarpa, Ruiz et Pav.* Par F. Claës, chargé de mission. Paris Ve, Lib. Emile Larose, 11, rue Victor-Cousin.

Dwarf Conifers for the Rock Garden.—In an article on "Rock Gardens," in the *Report* issued by the Ontario Department of Agriculture, Mr. F. Cleveland Morgan, of Montreal, gives the following list of Conifers suitable for planting in rock gardens: Juniperus chinensis var. Sargentii (low growing); J. horizontalis (very low growing); J. Sabina; J. S. var. tamariscifolia; J. communis var. suecica (pyramidal, bluish); Picea Albertiana var. conica (slow growing, pyramidal); P. excelsa var. Remontii; P. excelsa var. Maxwellii (dwarf and compact); Pinus montana var. Mughus (slow growing, but larger than others); Cupressus (Chamaecyparis) obtusa var. nana (very good); C. (Chamaecyparis) pisifera var. filifera; Taxus cuspidata var. nana (Japanese Yew); Thuya occidentalis var. globosa (almost round, three feet by four feet); and T. occidentalis var. Little Gem.

Littlehampton and District Horticultural Society.—The fourth annual show of this Society will be held on August 24, 1927. This early intimation of the decision of the Committee in respect of the Littlehampton Society's Show for the year 1927 is made for the purpose of enabling other societies and committees in Littlehampton and the surrounding district to avoid, if possible, any fixture on that date (there were four local shows on the same day this year). The Committee consider that if an endeavour is made by all societies and committees concerned to regard fixtures already made and to select an open date for the respective functions, it will provide an opportunity for more entertainment to the residents and visitors, be found to be to the mutual and financial advantage of all the societies and committees and tend to a greater success generally.

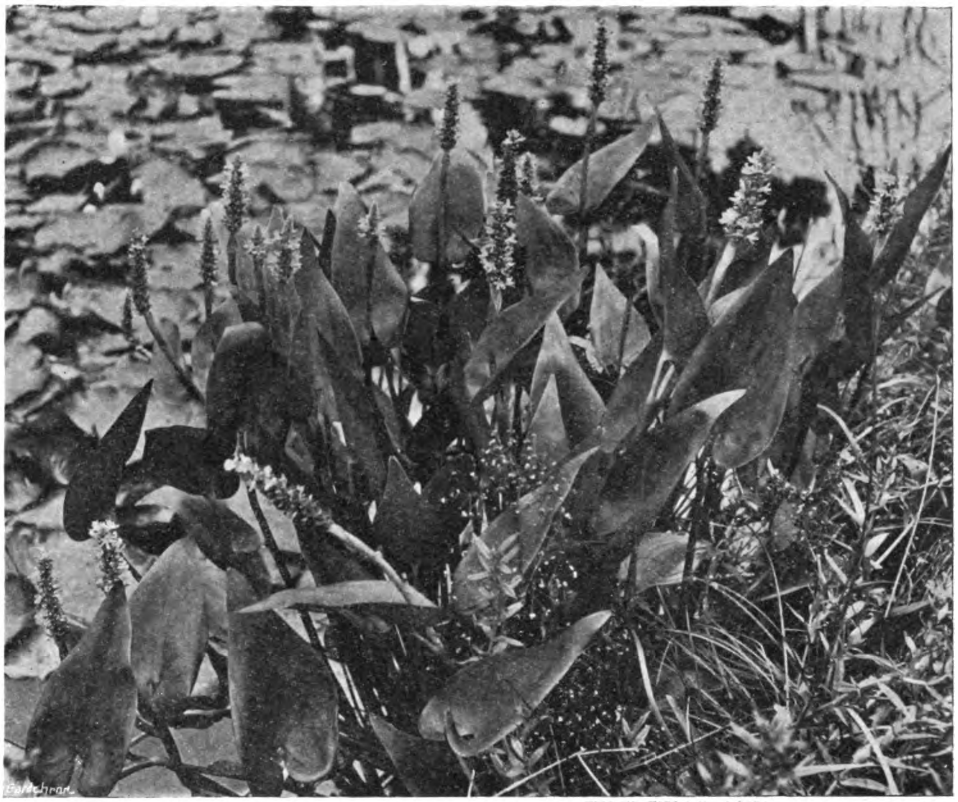

FIG. 114.—PONTEDERIA CORDATA AT GLASNEVIN.

(see p. 249).

Increasing Native Cultivation in the Soudan.—The completion of the wonderful Sennar dam and the canalisation of a considerable area of the Gezira plain has already had an immense influence on native cultivation in the Soudan. This enormous track of country which hitherto depended on a very uncertain rainfall is now watered by gravitation, and a new era of cultivation has been commenced. It is anticipated that larger areas will be planted with Cotton, and the arrangement is that natives will cultivate their own land under instruction and supervision. The Soudan Plantation Syndicate will market it for them under the best possible conditions. The cultivator will receive forty per cent. of the profits, twenty-five per cent. goes to the Syndicate, and thirty-five per cent. to the Government in consideration of the water supply and other services which have made the cultivation possible. In the recently published report for 1925, Lord Lloyd stated "The community of interest of the three partners in the project should be the basis of its future success."

Hyères Horticultural College.—M. Foussat, the Director of the Agricultural-Horticultural College at Hyères, in the south of France, has just retired upon pension, though he is still carrying on the duties appertaining to his former position until the appointment of a successor. On the 11th of October a competition will take place between the candidates for the post, all of whom must have obtained the Higher Education Horticultural Diploma.

Appointments for the Ensuing Week.—MONDAY, SEPTEMBER 27: British Mycological Society's autumn foray and annual meeting at Hereford (six days). TUESDAY, SEPTEMBER 28: Newcastle Horticultural Mutual Improvement Society's meeting and lecture. WEDNESDAY, SEPTEMBER 29: Glasgow and West of Scotland Horticultural Society's lecture. THURSDAY, SEPTEMBER 30: Paisley Florists' Society's meeting. FRIDAY, OCTOBER 1: Dundee Horticultural Society's lecture; Accrington and District Gardeners' Society's meeting; Manchester and North of England Orchid Society's meeting. SATURDAY, OCTOBER 2: Blackburn Horticultural Society's meeting.

"Gardeners' Chronicle" Seventy-five Years Ago.—*Cloth of Gold Rose.*—I see that "A Correspondent" pleads the cause of this Rose. I think that it is supposed to be more difficult to manage than it really is. I have had one now for several years, which has bloomed well and freely. It stands against a south wall, has no other plants against which to struggle intruded upon it, is well fed, and sharply pruned it grows in a soil which is naturally poor and sandy, but it has a barrow load made up of stable litter and burnt refuse, or of stable litter and loam, given to it each year. I think it possible that Cloth of Gold has got the character of being a shy bloomer from being grown upon its own roots; in that form I do not think it will succeed; at least, I do not know of any plant of it thus grown successfully. Mine is budded upon a Dog Rose, but Celine, I believe, makes a better stock for it than any other Rose does. I have found some of my best blooms come from shoots which I have laid into the ground, after drawing them down from the wall against which my tree grows. Such shoots have thrown other strong fleshy shoots from the point at which the laid shoot comes out of the ground again, and upon these I have had splendid blooms. I believe that Cloth of Gold only requires liberal treatment, and a little patience, in order to secure such a bloom as will amply repay the grower of it. *C. E. C., Shirley. Gard. Chron., September 27, 1851.*

The Week's Work.

THE ORCHID HOUSES.

By J. Collier, Gardener to Sir Jeremiah Colman, Bart.
Gatton Park, Reigate, Surrey.

Oncidiums.—Members of the genus Oncidium, when well-grown, are usually represented by plants in flower at all times of the year. The useful and pretty O. obryzatum blooms at this season and produces long, branching spikes of golden-yellow flowers spotted with brown. The plant is much appreciated at the present time when few Orchids are in flower. Other interesting members of the genus blooming at the present time are O. Papilio and O. P. Kramerianum. The latter is commonly known as the Butterfly Orchid. If allowed to do so, these plants will continue to produce a succession of flowers from the one stem for some time to come, but it is advisable for their well-being that the number should be limited to three or four, after which the flower stems should be removed.

Oncidium crispum.—Plants belonging to the O. crispum section, such as O. Forbesii, O. curtum, O. Gardneri and O. Marshallianum, are useful subjects when kept in a robust condition. O. Marshallianum produces its flowers during late spring and early summer, and the others during the autumn months. O. varicosum with its variety Rogersii is one of the most useful and beautiful, and is producing its flower-spikes at the present time. As the inflorescences become of sufficient length they should be tied to neat stakes, and the plants placed well up to the light. Slugs are very partial to the young, succulent inflorescences and usually appear in large numbers in the houses at this period; a good preventive of slugs is a piece of cotton-wool wrapped around the base of the peduncle. These Orchids are best placed in a house having an intermediate temperature. Give the roots plenty of moisture when the plants are making their growths. After flowering they should be afforded a decided rest, but on no account should the shoots be allowed to become shrivelled. Shallow pans form the most suitable receptacles for these Orchids, and only a thin layer of rooting material is needed. O. ornithorhynchum and its variety albiflorum, with others that have been growing in the cool house during the summer will be benefited by being removed to a cool position in the intermediate house for the winter.

THE KITCHEN GARDEN.

By F. Streeter, Gardener to Lord Leconfield, Petworth Park, Petworth, Sussex.

Carrots.—The main crop of Carrots should be lifted and stored before the weather breaks, otherwise, with frequent rainfall, the roots will be liable to splitting. Place plenty of clean sand between the layers of roots and keep the short tops on the outside of the heaps. Late-sown Carrots of the Horn type should be kept well hoed and dusted with soot on frequent occasions. This crop will continue to furnish fresh, young roots for some time to come.

Leeks.—Give all plantings of Leeks plenty of moisture at the roots and frequent soakings with liquid manure. Hoe the ground along each side of the row after each watering, for this will greatly assist the growth of the plants. Should there be any doubt as to there being a sufficient quantity of plants a few rows put out now will prove useful next May, after the main crop is finished.

Beet.—So soon as the roots become large enough they should be lifted carefully and stored as recommended for Carrots. Nothing is gained by leaving them in the ground too long. During the present dry spell of weather a good syringing either in the early morning or at night will prove of great value in hastening this crop to maturity. Take care not to break the roots, as this spoils their colour when cooked; also, if they are washed before taking them into the kitchen take care not to bruise the skin.

Globe Artichokes.—Cut off all the old chokes and dead leaves and give the roots a copious soaking with water. If the crop was mulched so much the better; endeavour to strengthen the crowns for next season's crop by the application of liquid manure.

General Remarks.—Keep down weeds and clean off all exhausted crops as quickly as possible. Bear in mind next season's cropping and manure, etc., accordingly. A certain area of ground should be trenched each autumn; this will gradually bring the garden into a good state of cultivation.

HARDY FRUIT GARDEN.

By W. Auton, Gardener to Viscount Elveden, Pyrford Court, Woking, Surrey.

Autumn-fruiting Raspberries.—These are now ripening their fruits and the canes should be kept exposed to the ripening influence of the sun and air as much as possible. Gather the fruits regularly as they quickly deteriorate when fully ripe and soon decay, particularly in rainy weather.

Root-pruning.—The practice of root-pruning is one that has brought about considerable controversy, but it is probably less practised than ever to-day, when such a large proportion of our fruit trees are on fibrous rooting stocks. Generally speaking, it is not a practice that one would advise too freely, but in cases where trees are inclined to make an excessive amount of unfruitful growth, judicious root-pruning may help to bring them to a bearing state. If it is considered desirable to root-prune, the work should be carried out at the present time and not be left until the fall of the leaf. The advantages which accrue from doing the work now are many. Any check given to the tree will tend to help the ripening of buds already formed; the soil being still warm will accelerate the healing of the cut wounds and facilitate the production of those fibrous roots which are so necessary to the tree to induce a condition of fruitfulness. Further, it is much easier to do the work under present soil conditions than it would be after heavy autumn rains. A trench should be opened at a sufficient distance from the tree to leave a large mass of earth untouched immediately around the stem. Any main roots cut through in this process should be carefully preserved while the work of tunnelling underneath is carried on. The main object of the pruning is to search for possible tap-roots which may go down into the cold subsoil and cause unfruitfulness. When these have been severed the trench may be again filled in, and it is good policy to use a compost of fibrous loam with a liberal addition of lime rubble and coarse bone-meal to encourage the production of a dense mass of fibrous roots. This should be rammed into position so tightly as possible as the cut roots are laid back, taking care that any bruised roots are cut cleanly with a sharp knife, as clean cuts heal quickly and soon develop fibrous roots. If tap-roots are found and severed it is not necessary to open the trench on the other side of the tree, at any rate, until the result is seen in the next season of growth.

General Remarks.—Young stocks raised by budding earlier in the season should be examined frequently and the ties loosened, if necessary. Keep the surface soil constantly hoed to ensure freedom from weeds. Any necessary relabelling of trees should be done before the removal of the crop while it is easy to identify the variety. Consistently unfruitful trees which it is desired to replace may be removed and the positions prepared for new trees. Heavy mulchings have now served their purpose and may be partially removed so that the borders may receive more direct sunlight. Late Plums may be allowed to hang on the trees till wanted, if well protected, but this is sometimes difficult as small insects do more damage than birds, and to save the crop it is necessary to gather and store it in the fruit-room.

THE FLOWER GARDEN.

By F. C. Puddle, Gardener to Lord Aberconway, Bodnant Taly-Cafn, North Wales.

Bulbs for the Rock Garden.—There are numbers of choice bulbous plants which are especially suitable for the rock garden and they should be planted during the next few weeks. The early-flowering bulbous Irises are particularly charming when planted in sunny, sheltered nooks, where their beautiful flowers of rich colouring are not too exposed to wintry blasts. A desirable selection would include, Iris Histrio, I. reticulata, I. Vartanii, I. Danfordiae, I. histrioides, I. Heldreichii, and the beautiful I. persica, with its delicate blending of colours. Iris Rosenbachiana is another lovely species which should be grown if it can be obtained, but I have not seen it offered for sale in recent years. The bulbs should be planted as early as possible in well-drained beds of sandy soil to which a goodly portion of leaf-mould has been added. The American Erythroniums, which include E. californicum, E. revolutum, E. Hendersonii, E. Hartwegii and E. grandiflorum comprise another charming race of plants which are perhaps most effective when planted in partially-shaded positions on the lower parts of the rock garden. They do not spread unduly, neither do they require much space, consequently they may be planted freely amongst other subjects in any fairly moist but well-drained bed, largely composed of peat or leaf-mould. Other desirable plants for similar positions are the dwarfer Fritillarias, F. aurea, F. coccinea, F. armena and F. pudica, also Dodecatheon media and its various garden varieties.

Other Dwarf-growing Bulbs.—Narcissus cyclamineus and N. Bulbocodium may be accommodated in the more sunny portions of the beds, but the dwarf N. minor var. nanus and the elegant N. triandrus albus are better planted on a ledge a few feet from the ground, where their dainty blossoms are nearer the eye. In a sunny but well-sheltered recess, with a well-drained, sandy soil, the rare Tecophilaea cyanocrocus may be tried, but it is advisable to place a sheet of glass over the plants during the winter. For the more exposed portions of the rock garden, the blue-striped Squill, Puschkinia scilloides, is very effective, also Hyacinthus amethystinus and A. azureum. Of Tulips, T. Clusiana, T. persica and T. Kaufmanniana are perhaps the most suitable species. Crocus Imperati, C. Tommasinianus and C. Sieberi are well worthy of a position where the corms can be protected from the depredations of field mice. Triteleia (Brodiaea) uniflora and its variety violacea may also be planted in a sunny position, but they should not be associated with other dwarf plants, as Triteleias quickly multiply and the groupings soon become a mass of bulbs.

FRUITS UNDER GLASS.

By T. Pateman, Gardener to Sir Charles Nall-Cain, Brocket Hall, Hertfordshire.

Early Vinery.—Vines growing in borders in the early vinery which have failed to give satisfactory crops during the past season, may require root-lifting. This operation is necessary when the vines have become weakened and the compost exhausted, due probably to frequent waterings; should the latter be considered the case, the present is the most suitable time to carry out the work, for the roots will have time to recuperate before the vines are started into growth in December. Commence at the extreme front of the border, removing the old soil carefully with a four-tined fork and taking every possible care not to injure any of the small roots that are near the surface. It is essential that every root fibre should be carefully preserved if the operation is to be a success.

The roots should be tied in bundles as the work proceeds and kept moist by covering them with damp sacking or some other material that will retain moisture until such time as the drainage has been put in order and the new compost placed in readiness to receive them.

Compost and Drainage.—One of the most important details in the successful cultivation of the Grape is efficient drainage of the border, for unless water passes freely away the soil will soon become stagnant and sour. The border may be drained as follows: stand bricks on their edges systematically over the bottom of the excavated trench about two inches apart, next place some broken material of a hard nature in sufficient quantity to form a good drainage, and cover the whole with two layers of turf laid grass-side downwards. The turves will serve to keep the drainage clear and form a base for the new compost to rest on. The latter may consist of a mixture of good, rich, mellow loam, coarse bone meal, mortar rubble and a small quantity of coarse grade vine border compound. Mix the materials by turning them several times; when used the compost should be sufficiently dry to allow it to be firmed by treading. When a quantity of soil has been placed in position for accommodating the first layer of roots, spread the latter evenly over the border, removing, at the same time, all faulty and injured parts with a sharp knife. Place a little soil over them and make them firm by treading. Follow with another layer of roots and soil, and so on, until the border is completed. The planting should be carried out as expeditiously as possible, but with every care, therefore, every preparation should be made to speed up the work. The house should be kept fairly close for a short time and shaded from bright sunshine, especially if the operation has been a severe one.

PLANTS UNDER GLASS.

By John Coutts, Assistant Curator, Royal Botanic Gardens, Kew.

Asclepias curassavica.—Young plants of this Swallowfoot that have done duty in the conservatory may be kept for next year; they will develop several shoots from the base of the stem that has flowered, and when these are several inches long, the old flowering shoot should be cut away. They may remain in their old pots over the winter, keeping them somewhat dry at the roots. If potted on early next year they will furnish a useful early batch for the conservatory. Seeds may be sown at this time and again early in the year, the best results being obtained by growing four plants in a pot, pricking them off direct into small pots. Pot them afterwards as required and allow the flowering shoots to develop without pinching.

Bravoa geminiflora.—This bulbous plant is a native of Mexico and more or less hardy in sheltered positions at the foot of a warm wall. The rich orange-red flowers are very beautiful and valuable for the decoration of a cool greenhouse. It is surprising that this Bravoa is not more generally grown, as it succeeds in any good potting compost. Place one bulb in a five-inch pot and grow the plant in a cold frame until it requires more head-room for the developing flower stem. Dry bulbs may usually be purchased about this date, and should be potted when received from the bulb merchant. Where stocks exist, this plant may be increased by division of the offsets, also by means of seeds.

Bredia hirsuta.—This is a pretty greenhouse shrub producing rose-pink flowers very freely during the summer. It may be propagated now by means of cuttings which root readily in a warm propagating case, the resulting plants making useful specimens in five-inch pots for next year, but if really good specimens are required they should be grown on for two years. During its growing period this plant enjoys an intermediate temperature, but when in flower will succeed in an ordinary greenhouse

Double Wallflowers.—Both tall and dwarf double Wallflowers are very useful in their season for the greenhouse and conservatory. Where a stock has been grown for this purpose, the plants should now be placed in pots so that they will be well established at the roots before the advent of winter. Well-grown specimens require six-inch pots. After potting, they should be well watered and stood in cold frames, where they should be kept close for a few days; subsequently the frames should be ventilated freely on every possible occasion, removing the lights entirely during fine days. During the dull days of winter care must be taken not to overwater them as they are apt to suffer from damp.

Crocus.—Many species of Crocus are very beautiful for the alpine house or small unheated greenhouse when grown in pans or small pots. The corms should be potted so soon as they are received, afterwards plunging the pots in ashes out-of-doors or standing them in a cold frame. Keep a sharp watch for mice which are very fond of Crocus corms. The large-flowered garden forms in many beautiful varieties are also suited to greenhouse decoration, either grown in pots or pans, but they need to be managed carefully, for any attempt at forcing will result in their going blind. A cold frame is all that is necessary for bringing them into flower; in any case, an ordinary greenhouse temperature is all that should be afforded them if successful results are to be obtained.

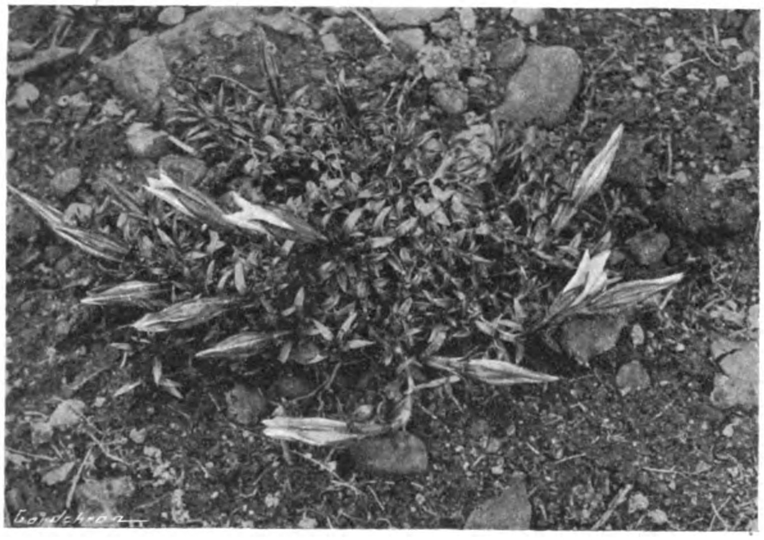

FIG. 115.—GENTIANA PROLATA.

(see p. 247).

FOR NORTHERN GARDENERS.

By A. T. Harrison, Gardener to the Marquis of Ailsa, Culzean Castle, Maybole, Ayrshire.

Cuttings.—If not already done, cuttings of bedding plants should be inserted either in boxes filled with sandy soil or put in a similar compost in frames. A list of plants likely to be required next season should be made and the probable numbers of each calculated, so that the space at disposal may be filled to the best advantage. Do not crowd the cuttings, as in many cases though they may be small when inserted they soon increase in size, and before planting-out time arrives, if put in too closely, will become congested, and in consequence spoiled. In selecting the cuttings preference should be given to short-jointed, sturdy shoots, as spindly growths, even should they develop roots, rarely make good plants. Along with the general run of bedding plants, which includes Pentstemons, Calceolarias and Violas, room should be found for a few rows of hardy plants, such as Nepeta Mussinii, Cheiranthus alpinus, Veronica Lyallii, and others of a like nature; their profuse flowering entitles them to a place in every garden.

Saving of Uncommon Seeds.—While seed-saving is, as a general rule, best left to specialists, there are occasions when, after a good season, seeds of rare plants may be obtained, and as these are not readily procurable from ordinary sources, they should be secured when ready and dried carefully, or, as is sometimes best, sown so soon as they are ripe. A rare display has been made this month of seedling Kniphofias raised from home-saved seeds sown three or four years ago, the spikes in some cases reaching a height of seven feet. Amongst other plants noted this season as carrying seed-pods are Tricuspidaria lanceolata, Romneya Coulteri, Lomatia ferruginea, Cordyline australis, Phormium tenax, Eremurus robustus and Dierama pulcherrima.

Colchicums and Autumn-flowering Crocuses.—Both of these closely allied families are worthy of extended cultivation, and the bulbs should be planted now in groups in the grass, where they may be expected to give an annual display for many years. Do not plant them under trees where the shade is heavy, but in places where they may obtain the full benefit of the waning autumn sunshine. Colchicums are strong-growing plants and capable of looking after themselves in the rougher parts of the grounds if care is taken not to cut their foliage prematurely when mowing during the early summer. The autumn-flowering Crocuses, of which C. speciosus is a gem, should be given better quarters, such as in front of the herbaceous border, or a fairly large pocket in the rock garden where they are less likely to be disturbed when not in flower. Care must also be taken not to spoil these plants by cutting away their foliage too early.

Beech and Hawthorn Hedges.—Hedges of these trees, together with those of the Hornbeam, are frequently employed as boundary hedges around gardens, and should now receive their annual trimming. If time was available to trim these hedges during the summer the work will be more speedily performed now as little remains but to cut away any secondary growths made since. Do not allow them to become straggly and loose, but cut them into shape, without allowing any increase in size, once they have reached the desired proportions. Seedlings of Ash, Elm, Elder, etc., should be dug or pulled out while young, as these soon spoil the symmetry of a good hedge, and if left, will entail an enormous amount of labour in getting rid of them in years to come.

FLOWER GARDEN.

MONTBRETIAS.

THESE highly decorative hardy, bulbous plants are invaluable subjects for flowering in late summer, and when well grown form striking clumps in the borders. The plants are of elegant growth and produce their graceful spikes of well-coloured flowers in August and September. As cut blooms they have few equals at this season as they lend themselves readily to artistic arrangement. As pot plants also they have attractions for spring work, but they should not be forced very hard.

Amongst recent introductions are some very fine, large-flowered varieties, but the old M. crocosmaeflora is still well worth growing, and is an excellent subject for creating patches of colour in open positions in the woodland garden or in front of shrubberies. In such positions the corms may be left in the ground, but they should be lifted and replanted before they become too thick, or exhaustion will follow and flowering cease.

Montbretias delight in a medium, well-drained loam, and where the soil is of a clayey nature it should be lightened by adding well-rotted organic manure and coarse sand. The corms should be planted about four to six inches apart, and three or four inches deep; to obtain the best results an open sunny position should be chosen.

Among the newer varieties of outstanding merit may be mentioned: Etoile de Feu, with intensely deep-glowing vermilion flowers, shaded scarlet; Fire King, large, showy flowers of fiery scarlet; Germania, orange-scarlet flowers with blood-red centre; Lady Hamilton, flushed orange outside, with reddish centre; Oeil de Dragon, large, rich golden-yellow flowers with small crimson markings in the centre; Star of the East, orange gold, with lemon eye and reddish colouring on the reverse of the petals; Solfatara, delicate primrose yellow, and Croesus, rich orange-yellow, the two last varieties being late in flowering and valuable for succession. *A. P. C.*

HARDY FLOWER BORDER.

ECHINACEA PURPUREA THE KING.

THIS new variety is quite distinct from the ordinary type of Purple Cone Flower, and has lifted the species from the level of mediocrity to a proud position among the most imposing and desirable autumn-flowering border plants. Grown in an open position, in tolerably good, deeply-trenched soil, the plant attains a height approximating five feet. The flowers are borne singly on long, rigid stems; they exceed five inches across, and are beautifully symmetrical. The centre is not sharply conical but is domed, like the half of a ball, covered with a glistening coat of sharp-pointed mail, the colour of burnished bronze. The petals are old-rose colour, free from any dull shading or staining of flat magenta which renders the flowers of the old type uninteresting.

It was in the nurseries of Mr. Taylor, of Bracknell, I discovered this plant, and at once became anxious to recall and revise an oft expressed opinion that Echinacea purpurea is unworthy of garden space.

Echinacea The King will certainly adorn honoured positions where the finest of border plants are grown. It will, I am confident, be wise to divide and transplant it at frequent intervals, thus maintaining full vigour and size. Now we have this really fine novelty we may surely look with confidence for other distinct and pleasing colours in Echinacea.

Echinacea purpurea was one of the first plants to be illustrated in *The Botanical Magazine*, for it forms the subject of the second plate in the first number, 1793, and is given under its synonym of Rudbeckia purpurea.

LINUM ARBOREUM.

OF the yellow Flaxes this is the best, not only because it starts to bloom some weeks before L. flavum, but because a good plant, two feet high and as much across will smother itself with golden blossoms and maintain a bright show right through summer and into the first two or three weeks of autumn.

The plant has been largely raised from seeds, and it varies somewhat in compactness of growth as well as in size of bloom. Nurserymen who are expert in hardy plants propagate only the most effective and satisfactory forms, and it is worth some care to secure really good stock. Like all the Linums, the plant enjoys a free, strong soil with a liberal dressing of lime rubble siftings or coarse grit.

It is well to plant stock in September, or failing that, to turn the plants out of pots in the spring and plant then. Old plants do not move well, but cuttings root readily enough, and an old, bedraggled clump should be discarded in favour of fresh plantations of well-rooted, young plants. Too much manure will sicken Linums, but they appreciate a dressing of good bone-meal, which improves both the size and lustre of the flowers.

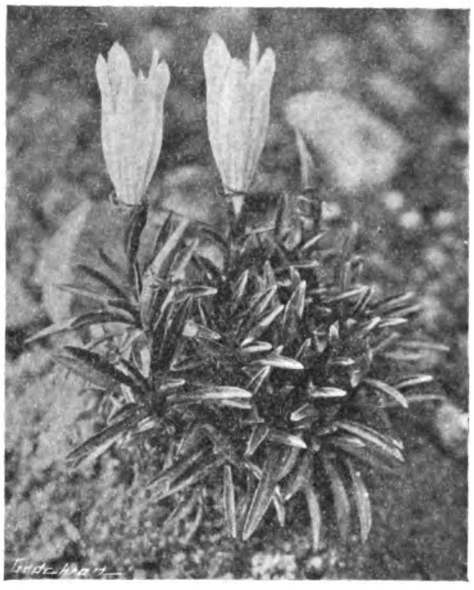

FIG. 116.—GENTIANA FROELICHII.

((see p. 247).

HELENIUM MADAME CANIVET.

WHILST in the midland and the northern counties I have, during the past summer, met with this distinct and very pleasing Helenium, both in private gardens and nurseries as well as in exhibits of hardy flowers at various shows. In all cases the owners have expressed great satisfaction in its possession, and it has been generally agreed that Madame Canivet is totally distinct from every other Helenium and a more pleasing garden plant or cut flower than most of its congeners.

That it has not yet been seen frequently in the south is probably due to the fact that its original home is Mr. Wm. Sydenham's nursery at Melbourne, Derby, rather a far cry from the Horticultural Hall, Vincent Square, but whoever is disposed to like a flower of clean, canary yellow petals, surrounding a bright chocolate brown disc, will assuredly do well to procure plants of H. Madame Canivet.

The habit of the plant is distinctly good: it stands up, with straight stems about two feet in length. One stem bears a goodly number of flowers, and there is none of that untidy flopping of the head which makes some of the Heleniums occupy more room than one can ungrudgingly give them.

CHRYSANTHEMUM MAXIMUM ROBINSONII.

THIS variety of the Ox-Eye Daisy tribe has of late years been cold-shouldered by many growers who have become enamoured with the larger flowers of modern varieties.

Novelty and change are agreeably welcome, and it is well we should find interest in new varieties of our popular flowers, but it occasionally happens that after a spell among new favourites, realisation comes home to us that an older, and for awhile a neglected plant, has charms of its own which the new varieties have not eclipsed. C. maximum Robinsonii has qualities which place it decidedly ahead of several of the modern, much advertised varieties. I am considering the plant from the point of view which concerns the garden owner, which is not infrequently at variance with the ideals of the commercial producer of flowers for cutting. The branching habit and slender stems of C. m. Robinsonii make it an extremely graceful plant in the herbaceous border. The small disc combines with the deeply lacerated, long and narrow petals to make a flower of exquisite refinement against which some of the huge blooms which find favour with market growers appear coarse and heavy.

It may be granted that the large flowers are of firmer texture, enabling them to be bunched and packed without injury, but that is a point of minor importance to the private gardener, especially when it is considered that C. m. Robinsonii lasts quite as long in the garden as the heavier, coarser varieties. I have a plant which was produced from a single offset severed from its parent plant rather late in spring. It has attained a height of over three feet, and stands erect without a stake. The laterals from this one stem number nine, and each carries a beautiful flower, the longevity of which has been much commented upon by several friends who have seen and admired it on various occasions during August and September.

C. maximum unquestionably repays annual transplanting, and it is better to pull the offsets apart and plant them singly than merely to chop a big clump into portions. *A. J. Macself.*

HARDY FERNS.

ONOCLEA (STRUTHIOPTERIS) GERMANICA.

THE Ostrich Ferns are ideal subjects for creating a fine effect in the stream garden or in thin woodland. As they are deciduous, some other subjects should be planted around and among them for winter effect, such as early-flowering bulbs and a few evergreen Ferns, such as Polystichum. During the summer Lilies will enhance the effect, provided suitable kinds are planted. The fronds of these Ferns are of two kinds, fertile and sterile, the former being grouped in the centre of the plant, the latter drooping around them. These Ferns may be increased by division of the creeping underground rhizomes which ramify for a considerable distance about established plants.

O. germanica is an exceedingly elegant species, having fronds three feet or more in length: it is a grand plant for massing on the banks of streams or in woodland; it prefers shade but will grow tolerably well in full exposure to sunlight.

O. pennsylvanica, which is often regarded as synonymous with O. germanica, has very narrow, fertile fronds. Well-drained peat and loam is necessary to the well-being of these truly noble Ferns, and a few bold groupings prominently displayed will prove a feature in any garden and have an ennobling effect on the surrounding vegetation.

O. germanica is a native of Central Europe and was introduced in 1760. O. pennsylvanica is a native of North America and was introduced in 1812. *Ralph E. Arnold.*

SOME OF THE NEWER GENTIANS.

THE following four species of Gentiana have flowered in my garden during July, and I hope the illustrations may interest readers of *The Gardeners' Chronicle* :—

GENTIANA FROELICHII (Fig. 116).—A native of the high ridges of Eastern Alps, rather rare, occurring in isolated small patches. The flowers are solitary, on stems about two inches long and are a beautiful pale blue colour outside, with five lobes about one inch across; tube white inside. The leaves are narrow, not unlike those of Dianthus alpinus, and the flowers open at the end of July. This species grows well in moist, stony soil.

G. **SIKKIMENSIS** (Fig. 117).—One of the Pneumonanthe section, a native of Sikkim, also found by Forrest in Yunnan, growing on open, moist, stony slopes. The stems are four to five inches long, with glossy-green, obovate leaves about one inch long by half-an-inch wide. The flowers are in clusters at the end of the shoot, there being ten to twelve flowers in the cluster. These are about one inch long by one quarter-of-an-inch in diameter, having five lobes, light blue with white throat, the outside of the tube being light green. G. sikkimensis is free-flowering, coming into bloom by the middle of July, and it sets a large quantity of seeds.

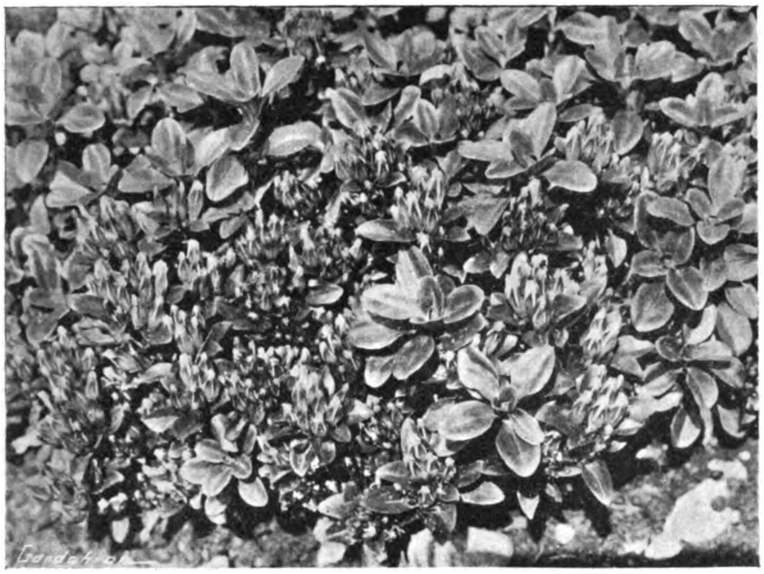

FIG. 117.—GENTIANA SIKKIMENSIS.

G. **STRAGULATA** (Fig. 118).—This species was named by the late Professor Balfour and Mr. G. Forrest. It is a native of Yunnan, where it grows in moist, stony pastures. In habit it is similar to G. sikkimensis, the leaves being a glossy green and about the same size, but the flowers are much more attractive. There are three to four flowers on the stems, which are three to four inches long; one flower appears at the apex of the stem and the others from the side.

The flowers are tubular, one-and-a-half inch long by half-an-inch in diameter, purple-blue outside. The five star-shaped lobes are a beautiful shade of light blue, each lobe having a white line down its centre.

This species is thriving here in stony soil with full exposure to the sun, and flowers in late July; both for its habit and flowers it is well worth growing.

G. **PROLATA** (Fig. 115).—This is also a late, July-flowering species and a native of Bhutan. It is dwarf, with prostrate stems, three to four inches long, which produce flowers at the end of each shoot.

The flowers of G. prolata are one-and-a-half inch long and have five lobes; in colour they are not unlike those of a a miniature G. Farreri.

This species sets seeds freely, which, if sown in early spring germinate quickly, and the seedlings flower during the following summer. *A. Harley, Blinkbonny, Kircaldy.*

ALPINE GARDEN.

TRIFOLIUM ALPINUM.

ALPINE plants are not, as a class, very noted for their scent. True, there are many fragrant alpines, but I think the scentless, or almost scentless alpines, far out-number the fragrant. Among fragrant flowers, moreover, the greater majority are, I think, what Bacon called "fast to their scent." You can smell them when you put your nose into them, but they do not throw their scent to any great distance. A notable exception, however, is Trifolium alpinum. Many times when collecting in the Alps I had been aware of a delicious Rose-like scent haunting the air. One would pass through a zone of it and out again, and it was long before I discovered what it was that emitted this rich fragrance. A year or two ago, however, I determined to trace the scent to its origin, and found that it was Trifolium alpinum, and I can now state definitely that it is not the flowers, or certainly not the flowers alone, which are scented—it is the plant itself. I have a clump growing on my rock garden here, and on a recent warm morning I noticed the plants were giving off their characteristic Rose-like smell although there were no flowers on the plant, nor have there been any as yet.

Trifolium alpinum is attractive in a quiet sort of way. It is a low-growing plant with trifoliate leaves, attaining one inch or two inches in height, and among these are low clustered flower-heads like pale Clover. The root-stock is woody, and the plant is by no means easy to collect, unless as seedlings. Perhaps for this reason the plant has always remained scarce in cultivation, being seldom offered for sale and rarely met with in rock gardens. Yet it is well worth growing on account of its neat, mat-forming habit and the delicious fragrance it gives off, especially on still, warm, sunny days.

Seeds, when they can be obtained, offer by far the easiest method of increase, and all the plant requires is a well-drained, sunny position in any light loam.

When staying at a farmhouse in the Pyrenees a year or two ago, my hosts brought in roots of Trifolium alpinum and told me that they used it as a pacific for throat and lung troubles. Everybody chewed the roots and seemed to think it was doing them much good. I chewed some, too, by way of being in the movement. It tasted not unpleasantly like liquorice, but I cannot say I derived any marked benefit; perhaps because I was not remarkably ill at the time. *Clarence Elliott, Stevenage.*

EOMECON CHIONANTHA.

SOME weeks ago I had the pleasure of seeing this delightful Poppywort in bloom, and it is indeed a charming plant. Known as the Poppy of the Dawn, it hails from Kwangsi, northwards from Hong Kong, whence it was introduced in 1885. It is a perennial herb, and will succeed in any moist, warm corner of the rock garden, preferably at the base of large stones, and, moreover, it is not very particular as to soil.

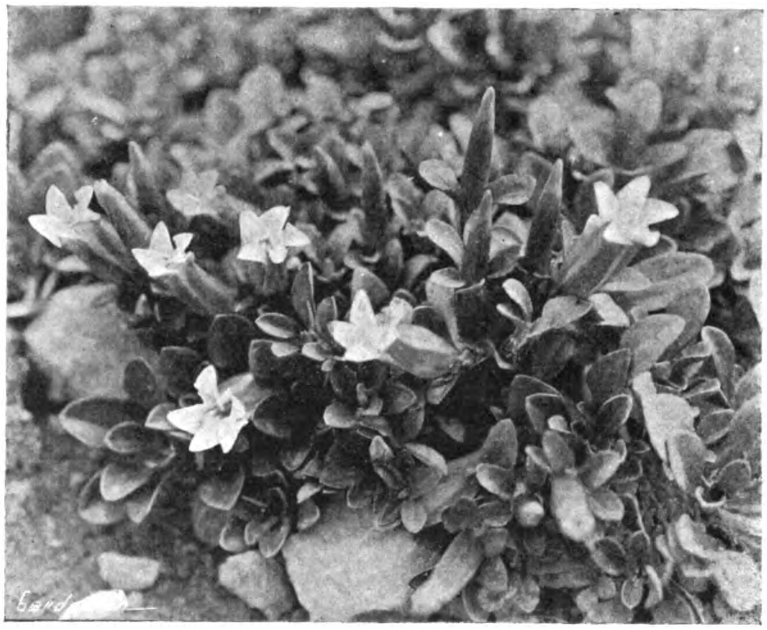

FIG. 118.—GENTIANA STRAGULATA.

The pure white flowers are terminal and about two inches in diameter, while the numerous stamens are yellow. The scapes are a foot or more in height, but these, unfortunately, do not appear so freely as one would wish. However, they are very welcome when they are produced, although the heart-shaped, scalloped leaves are always attractive. The species has proved hardy in the Chepstow district. Propagation is effected by division in the early spring or autumn. *T. W. B.*

INDOOR PLANTS.

ISOLOMA HIRSUTUM.

THE Isolomas are stove Gesnerads often confused with Achimenes and Gesnera, and requiring cultural treatment identical with Gesnera. They are natives of tropical America, from Bolivia and Peru to Mexico.

The flowers display brilliant colouring and the plants are of the utmost service for furnishing the stages of a warm glasshouse or for exhibition purposes.

I. hirsutum, one of the best garden species, has scarlet flowers and attractive, Gesnera-like foliage; the leaves and the stem are more or less hirsute. The plant grows about one foot or rather less in height.

A cross between I. hirsutum and Tydaea grandiflora has given us some brilliantly-coloured hybrids of compact growth, the plants being of simple culture. *Ralph E. Arnold.*

HARDINESS OF BOUGAINVILLEA AND PLUMBAGO.

I HAD cause to note this season the effects of a very low temperature on various plants, especially large specimens of Bougainvillea glabra and Plumbago capensis.

These climbers were, of course, dormant in January, when we experienced a week of severe weather. The heating apparatus broke down just as the frost started, and as the iron and glass structure was so huge, and for other reasons, it was decided to let the contents take their chance. For three nights more than 20° of frost were registered outside, and the inside thermometer fell to 22°—10° of frost one night—and the plants were frozen hard. There was no heat available for ten days of severe weather. Kentias, Imantophyllums and the like were soon killed and we thought the creepers were killed also as they were tied to the ironwork. But, although later than usual in starting into leaf, they have both done splendidly, and, in fact, the Plumbago has beaten all previous efforts at flowering. They are established plants with very large stems.

It may be noted that though the temperature was so low, the air was quite still. I quite think that both Bougainvillea and Plumbago, when established in well-drained, loamy borders would succeed successfully in sunny but otherwise unheated borders in southern districts. *G. W. Stacey, Chorley Wood Cedars.*

PLANTS NEW OR NOTEWORTHY.

CEDRUS LIBANI DECIDUA, CARRIERE.

THIS is a distinct and interesting, though little-known variety of the Lebanon Cedar, that differs chiefly from the normal tree in the foliage being deciduous, the greater portion of the leaves being shed at one and the same time as in the case of the common Larch. This character is quite persistent, having been noted for over thirty years in the case of a tree growing on the lawn at Holmwood House, in Kent.

Many years ago, the late Lord Derby directed my attention to this Cedar, fearing that it was dying, and, curiously enough, only last week another member of the same family, who is in occupation of the estate, had his misgivings as to the health of the same tree. This is certainly one of the most interesting of the several varieties of the Lebanon Cedar, for though the whole of the foliage is not shed at the same time, still sufficient is to warrant the application of the term deciduous. For a long number of years I have noticed the late autumn shedding of the leaves, curiously bare appearance of the tree in winter, and shooting forth of the young foliage in spring.

Further than the annual casting of the leaves, I could detect little difference between the species and variety, whether in the male or female cones, or in the length and colour of foliage. Generally, however, the leaves are shorter, and the cones sparsely produced when compared with the ordinary run of Lebanon Cedars. The specimen referred to is in perfect health, about seventy feet high, with a large and well-formed bole, and occupies a prominent position on the front lawn, not far distant from other trees of the same kind that were planted by Pitt, the great statesman, when he owned the Holwood property. *A. D. Webster.*

FLORISTS' FLOWERS.

BORDER CARNATIONS.

THE new border Carnations which are raised year by year, while supplementing the class to which they belong, fail to oust those which are tried and trustworthy favourites. This is nowhere more apparent than in the white-ground fancy, border Carnation, which has in the past few years been augmented by varieties of sterling merit, while such well-known sorts as Mrs. Hawksbee, Fair Ellen and Daisy Walker still continue to hold their own and to find champions who aver there are none better among modern varieties.

Many pin their faith to Mrs. E. Charrington, particularly in the north, declaring it to be the finest introduction in white grounds of recent years, while others point out its tendency to a split calyx and blunt buds. However this may be, this variety is well in evidence in every show and in the open border, for it is floriferous and grows well.

Two novelties added to this class and which are being sent out for the first time this autumn, are Mrs. Seymour and Mrs. J. Fairlie, and both are so excellent in shape and habit of growth that they deserve the praise gained on their appearance. The former variety is marked and ticked with carmine rose; it was the premier bloom, at the summer show of the Carnation Society held at Vincent Square last year and was awarded a First Class Certificate and an Award of Merit this season, while Mrs. J. Fairlie, marked slate or lavender-grey, is an ideal flower, its colouring being of a slightly different shade to any at present in cultivation. They are both large blooms and will be a welcome addition for either pot or border culture.

Yellow-ground fancies, which always seem to be the centre of attraction at shows, are enriched yearly by notable additions, and in Duke Ivor and Ben More I think two varieties will be found which are excellent in every respect, the former being heavily marked with carmine-crimson, and the latter picoteed a bright pink, giving it a very neat appearance. I like the strong upstanding habit which is common to both sorts. There is another fine novelty, Hadrian, which has scarlet and dark crimson markings on a buff ground; it is a very distinct flower.

Fancies, by which is understood flowers of any combination of colouring, except white or yellow grounds, are steadily advancing in number and favour, and the novelties in this class, while being of the strongest habit, show a diversity of colour which is as novel as it is pleasing. One, named Julia B. Wells, coloured mauve, slate-grey, striped plum-blue, is quite distinct and a grand border variety, its beauty being enhanced by a rosy flush when first opening. The blooms are large, and as befits any variety specially recommended for the garden, it is of strong growth and floriferous.

Ebor is another splendid fancy sort of excellent shape and habit, its light chocolate ground striped dark crimson and scarlet, striking the eye as something new, the nearest to it in colouring being Myrtle Pettigrew, introduced a season or so ago.

There is great scope in this class for combinations and markings, and there is no doubt they add variety and charm to any collection, two or three which I specially note being the veteran Verdun, still extensively cultivated; Cleopatra, madder, ticked scarlet; and the recent variety, The Cadi, a beautifully shaped, brilliant bloom, a variety which for floriferousness and strong habit could hardly be excelled.

A scarlet self, one of this season's novelties, named Red Gauntlet, which has not been much noted is, I think, worth watching. There are very few really good varieties of this colour, and this is a bold, upstanding flower of strong growth, fine shape and excellent for pot or garden culture, of a brilliant and telling shade.

If only perfume could always be taken for granted no other flower would be more welcome in its season than the border Carnation, and I suppose it is for this reason that most amateurs grow the Clove varieties for general garden purposes, and now that there are so many and of such varied colouring, no difficulty is experienced in making a selection.

Of the Cloves I still think Mrs. A. Brotherstone and Stenforth are two of the best, but many people prefer selfs, and I suppose in the long run they are more useful. The latest additions to this class, Black Dwarf, a large, very dark crimson variety with neat habit of growth, and Royal Clove, a huge flower of lovely cardinal pink colouring, with strongest Clove perfume and a faultless calyx leave nothing to be desired, the latter claiming to be the best and strongest Clove in commerce. As a rule, I find Carnations of this shade grow very strongly and, like the crimson Cloves, make very useful plants if left undisturbed in the border.

Crystal Clove is a delightful White, while for massing, floriferousness and perfume, Spicy Breeze is a most satisfactory crimson variety.

There were some very outstanding varieties sent out last autumn, and it has been interesting to note their habit in the open border. Anyone desirous of adding the following to their collection can do so with confidence: Bookham Scarlet, which has lived up to the reputation it received on its first appearance is a fine, bold flower of good shape and substance, the foliage being short and strong. This Carnation has figured on all show boards this season and won many prizes.

The new Ravenswood, an excellent white-ground fancy, is very heavily marked with maroon-crimson. Valentine, a fine clear yellow self, which blooms early, has a well-shaped flower and good foliage. Hotspur and Lettice are both yellow-ground fancies of great merit. They possess strong calyces, are very floriferous, and the habit of growth leaves nothing to be desired. The former is a flower of exceptionally good colouring. Dr. Stone, a brilliant and lasting flower, the plant being very strong in growth, and Clio, are yellow-grounds, the latter very distinct and beautiful on account of its one scarlet wedge of colour on each petal. Benedict, a very large, deep rose self; Delicosa, lilac-rose self, and Nautilus, salmon-rose self, the last sent out two seasons ago, are all good flowers of excellent shape and delightful colouring.

A variety which has given me great pleasure is Mrs. J. L. Gibson, somewhat like Kelso in colouring, but more suitable for the border than that charming variety, which produces rather inadequate foliage. Mrs. Gibson flowers early, gives strong layers, the calyx is sound, and although not a very large bloom it is beautiful and very lasting. Many, again, will doubtless find that Lady Shackleton is admirable for garden culture in place of Lieut. Shackleton, a variety which does not do well everywhere. Lovely as this Carnation undoubtedly is, the former is decidedly more dependable for the general grower, giving an abundance of huge blooms, while enough layers, which are exceedingly strong, may be obtained in one season from a well-grown plant to make a fair-sized bed for the following year. *J. B. Wells.*

NOTES FROM GLASNEVIN.

Lilium sulphureum.

This is a sun- and loam-loving species which thrives well here in a narrow, warm border in front of the houses (Fig. 119). When really vigorous it is fully six feet high at flowering time in September. The stems are fairly strong and only require light supports when the flowers are fully open, as they are then somewhat top-heavy. The scattered, linear leaves are four inches to five inches long near the base of the stem but diminish towards the apex. The length of the leaves, however, depends entirely on the vigour of the specimen as also does the number of flowers. Here from one to five flowers are produced according to the strength of the stem, each flower about six inches long by five inches across the mouth, sulphur-yellow within except the recurved portion of the segments, which is creamy white: outside, the segments are flushed with claret-red, and the flowers are sweetly scented. Bulbils are produced in the axils of the upper leaves affording a ready means of increase. A deep, well-drained loam and a sunny position appear to suit this species admirably. Mr. E. H. Wilson considers L. sulphureum a variety or perhaps only a form of L. myriophyllum (see *Lilies of Eastern Asia*, p. 35).

Pontederia cordata.

Although long known in gardens this hardy member of the Pontederiaceae is not so often seen in good condition as it deserves. It is perfectly hardy and will grow in two feet of water or less. Of tufted upright habit it will reach a height of three feet or more, each stem bearing one leaf only, and many of the stems terminated by a spike of blue flowers (see Fig. 114). The leaves are deeply heart-shaped tapering to a blunt point. The plant increases rapidly in size and may be divided in spring by means of a spade or fork, transplanting the divisions to any desired position where there is a little water and sufficient depth of mud to hold the roots. P. cordata is commonly known as the Pickerel Weed in North America, and Lovell, in *The Flower and the Bee*, has much to say of it in connection with insect visitation. On p. 90 he states that he has actually counted so many as seventy visits per minute by the small bumblebee, Bombus vagans.

Pistacia Terebinthus.

Commonly known as the Chian Turpentine Tree because of the medicinal juice extracted from the bark, this shrub is little grown outside botanical collections. It is, however, of distinct appearance and would prove useful for sunny, rather than dry banks which are sometimes difficult to furnish. At Glasnevin a very old plant, about six feet high by as much through, is so placed that it has a background of Conifers; against these it shows up conspicuously by reason of the peculiar metallic sheen of the leaves. These are unequally pinnate, consisting of from seven to nine leaflets, which vary from oval to ovate, light green below and glaucous green above. The flowers are green and small and of no ornamental importance. The leaves and shoots, when broken, have a rather pleasant smell, reminiscent of turpentine.

Clematis aromatica.

Reputed to be of hybrid origin, this is a useful autumn-flowering plant of herbaceous rather than woody character. If grown against a wall the stems remain alive to a greater height than if grown in a bed or border in the open, but in any case they require support. An ideal position would be a sunny bank among low shrubs where the roots would have shade and the shoots could trail at will. The flowers are fragrant, composed of four spreading dark blue sepals with a conspicuous boss of creamy white stamens. To those who have room, C. serratifolia can also be recommended for its autumnal flowering. The plant is not quite so vigorous as C. tangutica and its variety, but is capable of covering a considerable space n the course of the summer, the yellow flowers hough small, being freely produced. The leaves are composed of from three to five leaflets, the latter pointed and coarsely toothed, while the flowers are produced in threes on a common stalk arising from the leaf axils. The species was described by Rehder in *The Standard Cyclopedia of Horticulture* (1914), but is apparently little known and is not mentioned in *The Manual of Cultivated Plants* by L. H. Bailey. Seeds were received at Glasnevin from the Arnold Arboretum in 1911.

Cyclamen africanum.

Apart from minor botanical details, such as the shape and incision of the calyx lobes, C. africanum is distinct in general appearance from C. neapolitanum. The flowers are larger and broader in proportion to their length, and are produced just as freely, in fact, the number of flowers arising from the larger corms is enormous. It flowers in September at the same time as the Neapolitan species, the flowers appearing before the leaves. The latter appear, however, when most of the flowers are fully open and develop through late autumn, forming a carpet of beautifully marbled foliage after the flowers have disappeared. The leaves grow much larger than those of C. neapolitanum, hence, probably, the horticultural specific name, macrophyllum. Seeds are freely produced and germinate readily in pans of sandy loam and leaf-soil. They should be sown so soon as ripe in spring and the seedlings pricked off in a similar compost when large enough to handle. By the following autumn quite fair-sized corms will have formed, and by the time they are two years old, will flower well and improve nnually. *J. W. Besant.*

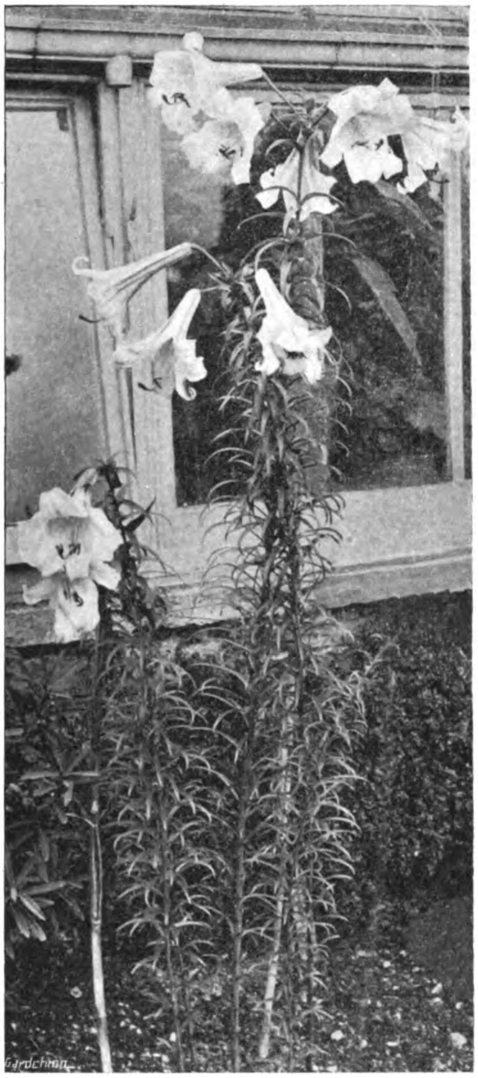

FIG. 119.—LILIUM SULPHUREUM AT GLASNEVIN.

NOTES FROM WISLEY.

Because of the large number of new Dahlias received for trial at Wisley this year, it was necessary to provide additional accommodation for them, and a portion of the vegetable quarters on the hill, above the laboratory, has been utilised for this purpose. The plants here are not quite so robust as those in the original trial ground owing to the lighter soil and the lack of shelter, but they stand less risk of damage by early frosts than those down below.

A large proportion of the plants on the hill site are Mignons, among which are blooming many scarlet-flowered varieties similar to Coltness Gem, and a good orange-scarlet named Grace. Numbers of yellow-flowered Mignons have also been sent for trial, one of the best of which is H. J. Jones. Many of the white-flowered varieties show traces of pink, but an exception is Roem van Scheidam, which has particularly large and pure white blooms. Pink flowers in profusion are borne by Rosalind and by the still deeper-coloured Pink Coltness, but a really good, clear, rose-pink Mignon variety does not occur in this trial. Avondrood and Argos are good crimson-flowered varieties belonging to this class, and Rosebud, with salmon flowers, is remarkable for its extremely dwarf and spreading habit.

Other Dahlias which are particularly suitable for garden decoration are those belonging to the small-flowered Decorative class, many attractive varieties of which are to be found in the lower trial ground. Among the most useful for this purpose are Persis, which has pink flowers suffused with yellow, and Raider, with orange-buff blooms, which, even when fully expanded, still bear traces of purple, which is their colour when in bud. In the large-flowered Decorative class Jersey Beauty is a very handsome variety with pink blossoms. Reginald Godfrey and Border Perfection, both of which bear bright red flowers on stiff and wiry stems, are also very showy.

Among the Star Dahlias, Rusper Star and Charlwood Star shine brightly, and Mars, Nerissa, and the quaint pink- and white-flowered Tommy Laing are neat representatives of the Pompon section. The Camellia-flowered Fée Rose is noteworthy on account of the abundance of bloom which it produces, and the unobstrusive pale buff flowers of King of the Autumn in the Paeony-flowered class have an attraction of their own.

The dark-foliaged varieties, such as Nigra, have this year been augmented by Picaninni, a purple-leaved Mignon sort with dark red flowers and by Lucifer. The flowers of the latter seem to be particularly attractive to bumble bees which are not easy to see when settled on the brown and yellow disc florets.

Still further alterations have taken place in the rock garden, where the formation of the rockwork at the top entrance has been re-arranged, and a much bolder effect has been produced. Good soil has been carefully packed behind each of the stones, and this should give the new planting a good start.

Heedless of this upheaval, a large patch of Geranium Wallichianum is in bloom at no great distance away, while in an adjoining bed is Buxton's variety of this pretty Cranesbill, which is a great improvement on the type. The flowers are more shapely, larger, and have a distinct white centre which is rimmed with a broad margin of pale opalescent blue. A large patch of Cyclamen neapolitanum is also in flower in the rock garden, and its white variety is to be seen in bloom in the alpine house.

Alterations are also in progress in the neighbourhood of the two round ponds where an old tool shed has been demolished. A new walk is in course of construction which should add considerably to the beauty of this part of the gardens. By the side of the large pond, in the field garden, the Berberis seedlings and Cotoneasters are fruiting well. The female plants of the Sea Buckthorn growing here are now bright with orange berries. *J. E. Grant White.*

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DAVID DOUGLAS.

IN these times of turmoil and stress and political and social uncertainty, when the achievements of great men of the past are apt to be forgotten, the charming lines written by the late Reginald Farrer in his preface to *The Rainbow Bridge* seem most appropriate. Both Douglas and Farrer, giants in their respective spheres of operations in the New and Old Worlds, both penetrated lands which few white men had ever trodden, and both lost their lives under tragic circumstances, but their lives were given for the welfare of posterity, therefore their achievements should be kept before us.

Farrer writes: "Let us go then for a while out of the storm into the calm, out of the clamour of guns into the radiant stillness that fills the remote heart of Asia. For, after all, the guns may roar for their time, and lay the world in ruins around us: but now again the Irises are blooming at the Halls of Heaven."

Let us go then—all we who love Conifers, to Mount Shasta and the Santa Lucia, into the radiant stillness of the British Columbian and Californian heights, where the towering trees that Douglas discovered grow, year after year, nearer and nearer the Gates of Heaven; let us plant and again plant examples of the greatest tribe in the realms of horticulture, as stately avenues, bold backgrounds, and as specimens for lawn or park. Or we may plant them in masses—as in Nature—one towering above its neighbour, the greens, the greys, the blues and the golds intermingling, the branches crossing and recrossing. The glittering silver bands of Abies Webbiana or Picea ajanensis upturned by the breeze are lovely in winter with a scattering of newly-fallen snow on their branches; or black against the autumn tints of the golden Beech or the berried Rowan; radiant in the early summer, their branches tipped with greens and blues. The hoar-frosted Cedrus atlantica glauca mingling with the pure gold of Picea orientalis aurea, and the long, light green cones hanging from the feathery branches of Pinus excelsa, kissing the pure violet cones of Abies Veitchii, provide pictures of delight.

About one hundred years ago, the Horticultural Society decided to send David Douglas, then twenty-five years of age, to explore and collect seeds in a treasure land—the trackless wilds of north-west America. How faithfully he did his duty to the Society and mankind may be seen on every hand, and I feel sure that all those who possess the fruits of his pilgrimage for pilgrimage it was, with danger on every hand, ending eventually in death—will be lenient with the few lines that follow, which are penned not so much for those who are already acquainted with his greatest achievements as for those who, although they possess his introductions, may not know they were discovered by this intrepid explorer.

Douglas was born at Scone, a village outside Perth, in 1799, and at an early age was apprenticed in the famous gardens of Scone Palace, the property of the Earl of Mansfield, where he remained for seven years, and during this period made himself acquainted with the native and exotic plants within his reach and acquired a slight knowledge of botany.

He extended this knowledge during the two subsequent years in the gardens of Sir Robert Preston at Valleyfield. In 1820 he was employed in the Botanic Garden of the University of Glasgow, where he continued his study of botany, and it was here that William Hooker, professor of botany at the University, took an interest in Douglas, so much so, indeed, that Douglas accompanied him on his excursions in the Highlands for the purpose of collecting materials for his *Flora Scotia*. Afterwards Hooker recommending him to Mr. Sabine, then Secretary of the Horticultural Society of London, who appointed Douglas as collector to the Society.

In 1824 Douglas was sent to the north-west of America, and landed on the banks of the Columbia River in the spring of 1825, remaining in this district for two years, and sending home, from time to time, many plants, much seed, and numerous dried specimens. Returning in 1827, he spent two years in England, and then set out again for the north-west in 1829: in this and the following year Douglas made his finest discoveries. Travelling down the Californian coast—where probably no white man had been—he continued to discover and collect seeds of many fine Abies and other plants, leaving the north-west in 1833.

Later in this year he left for the Sandwich Islands, on what, unfortunately, proved to be his last journey. "The natives of these islands dug deep pits in which they caught wild cattle and on one of his excursions Douglas fell accidentally into one of these pits in which one of these infuriated animals was already trapped; the animal fell upon him and he was found dreadfully mangled and quite dead, July 14, 1824."

The very high opinion in which Douglas was held by his fellow countrymen and others abroad culminated in the erection in Scone Church (near the house in which he was born) of a fine monument, twenty-three feet high (built of the famous Kingoadie stone, which is a species of bluish-grey sandstone, taking a fine polish and of great durability) on the sides of which marble panels were let in containing suitable inscriptions. The memorial was finished in 1841 and subscriptions other than from his own country and England came from Vienna, Frankfort, Copenhagen and France, thus showing the world-wide appreciation of this great explorer.

It has been truly written, "There is scarcely a spot deserving the name of a garden, either in Europe or the United States, in which some of the discoveries of Douglas do not form the chief attraction, the frequent mention of his name as the discoverer and introducer of some of the finest Coniferous trees that adorn the lawns and parks of Great Britain affords abundant evidence that the above statement, contains very much, if not the whole truth, and that to no single individual is modern horticulture more indebted than to David Douglas. His untimely end, together with the length of time that has elapsed since the introduction into gardens of his finest discoveries have all tended to dim the record of his achievements, but the noble Fir which so properly bears his name, will, it is true, perpetuate it to distant ages."

It is hard to decide which Conifer Douglas introduced stands out most conspicuously, but I venture to think the choice would lay either with the noble Fir that bears his name, with a trunk rising in its native habitat to three hundred feet and often more, clothed from top to bottom with branches of the greenest of green foliage, with long pendulous cones nodding and swaying in the wind, for this is the only Fir whose branches sweep the ground in old age as in youth—evidence of this can be proved by the trees at Murthly Castle or Castle Menzies, both in the county of Douglas's birth; or the symmetrical and elegant form of Abies bracteata with its unique cones, sharp-pointed leaves and its squirrel-coloured summer shoots. Alas! this Abies is becoming scarcer and scarcer year by year, and with the exception of perhaps Picea Breweriana, its native habitat is more restricted than that of any other Conifer in the west; or the "Myth" silver Fir, Abies amabilis, whose foliage is of the darkest and lustrous of greens, with two silvery bands on either side of the midrib beneath.

This last is indeed a "myth" Fir, as "for a long series of years Abies amabilis was one of the rarest trees in the British Pinetum, and as regards its origin, one of the most obscure of the north-west American Firs, so much so that on the other side of the Atlantic its very existence as a species was called into question, and the discovery of Douglas began to be regarded as a tradition and a myth." The little we know of its discovery was communicated by Douglas to Sir William Hooker, and from this correspondence we learn that he first saw A. amabilis in September, 1925, on the top of a high mountain south of the Grand Rapids of the Columbia river, after a laborious climb of fifteen hours. It was not until he had accomplished his remarkable journey up that river in 1830 that he was able to secure seeds which he despatched to England at the end of the year. During the fifty years that followed many seed collectors visited the region of the Columbia River but all of them failed to rediscover the true A. amabilis of Douglas, but at length the mystery which had shrouded this fine species was unveiled by the energy of the American botanists, Doctors Engelmann and Parry and Professor Sargent, who, while investigating the forests of the Pacific coasts during the summer and autumn of 1880, rediscovered it on Silver Mountain, near Fort Hope on the Fraser River, at an altitude of 4,000 to 5,500 feet. Shortly afterwards it was again found by Professor Sargent on the same classic ground on which Douglas, fifty-five years before, had discovered it.

During his first journey (1825) and his second (1827) Douglas lost on several occasions all his seeds and notes in the virgin forests, and in the rapids he had to cross. In these forests no naturalists and perhaps no white man had ever before penetrated, for although he discovered A. bracteata in 1830, it was not until 1853 that William Lobb, collecting for Messrs. Veitch, obtained a small supply of seeds, and for more than thirty years after this all attempts to procure seeds of this Fir proved unavailing.

Other Silver Firs discovered and introduced by Douglas are Abies grandis, with its sky-scraper height and immense spread of branch; Abies nobilis, easily identified by its huge, upstanding cones and soft saxe-blue foliage, often "heightened to silvery whiteness," when the tree reaches maturity; and the compact column-like Abies magnifica, with flattened horizontal branches and leaves appearing as if they had been to Trufits to be curled, so regular are they. This species adds terminals of two feet or more yearly. The writer watched this Fir for several years at Ochtertyre, in Perthshire, adding a yearly growth considerably in excess of this figure.

Abies magnifica, although introduced into commerce by John Jeffrey in 1851, when collecting for the Scottish Oregon Society, was undoubtedly originally discovered by Douglas during his first mission to north-west America near the Grand Rapids on the Columbia River in 1825, at the same time and same place that he first saw A. nobilis, although unable to collect seeds of either Abies in that year.

The only Picea Douglas introduced was the mighty P. sitchensis, which towers to a height of 200 feet to 300 feet, with an immense spread; it is a very handsome and rapid grower, making a yearly growth of two to three feet or more in moist, deep, loamy soils. Professor Sargent in his *Silva of North America* writes of the tree as follows : " No tree in the American forest grows with greater vigour or shows stronger evidence of vitality, and there are few more impressive and beautiful objects in the forests of temperate North America than one of these mighty Spruce trees, with its spire-like head raised high above its broad base of sweeping and upturned branches, loaded with cones nodding to the slightest breeze, and its leaves now silvery white, now dark and lustrous shining in the sunlight."

The finest specimens the writer has seen are at Scone Palace and Ochtertyre in central Perthshire. Care should be exercised in selecting a suitable position so that the tree may have plenty of room to grow.

Douglas discovered five or six species of the genus Pinus, one of his principal introductions being Pinus Lambertiana, a very tall-growing Pine attaining a height of 300 feet on the western slopes of the Sierra Nevada and in the Santa Lucia mountains ; its cones are very large and contain a copious amount of resin.

Pinus ponderosa discovered and introduced in 1827, is another very tall and stately tree, rising to 250 feet in the humid climate of California. This Pine grows very well in the British Isles, making a fine specimen tree, attaining its greatest height in central Perthshire, although a very fine specimen is growing so far south as Dropmore.

Pinus Sabiniana, also of Californian origin, is not very suitable for British gardens, while Pinus monticola, introduced in 1831, is a fine tree and has adapted itself to almost every locality, the writer having seen fine examples in the north of Abercairney, in Perthshire, and in the south at Kenfield Hall, near Canterbury.

Perhaps of all the Pines introduced by Douglas which he found growing at Monterey in 1831, the best is Pinus radiata, one of the most beautiful of this family, growing better in the south of England and Ireland than any other Pine. It has lovely foliage of a wonderful shade of grass green, is well clothed to the ground, is pyramidal or columnar in shape, and makes a yearly terminal of two feet or more when growing in deep, moist, loamy soil. The species is well suited for a position where a single specimen is needed, but should be planted for preference on high ground or in a sheltered position, as the new shoots are liable to be cut by late spring frosts.

The only other Pines associated with Douglas are P. contorta and P. Coulteri neither of which have much to recommend them for permanent or landscape planting.

Other than the Conifers already mentioned, Douglas introduced more than two hundred species, including Oaks, Maples and other trees and shrubs. Also a great number of annuals, biennials and perennials, including Pentstemon, Clarkia, Collinsia, Lupins and a host more.

Until 1914, the journal kept by Douglas of his early travels had remained unpublished, and it is to the credit of the Royal Horticultural Society, through their very charming Secretary, the late Rev. William Wilks, that Douglas's notes were given to the world, and in a leading article on this book in *The Gardeners' Chronicle*. of 13th February, 1915, a very clear note was struck : " It is interesting to follow Douglas, the intrepid and successful pioneer, in his long and weary journey, through the succession of delights and disasters, discoveries, losses and disappointments ; *though the events are recorded in very simple language*. Dangers encountered and hardships endured, terminated by a tragic death, make the history of many a pioneer. Douglas relates narrow escapes from wild beasts, and alternately wading waist high in water at 35° Fahrenheit, and soft snow four to seven feet deep."

That depicts the man—one of the great band of explorers from over the border—full of self-reliance, untold confidence and full of grit, and dour withall ; for remember, in 1824, Douglas went out alone to explore unknown lands ; in 1924 explorers cross the Tibetian border with cavalcades !

Here, then, I must leave this great pioneer, rejoicing in his achievements, sympathising with him in his hardships, and carrying on in some small way the great work he began, and as the Fir that bears his name will perpetuate his fame in the ages to come, so likewise may many others perpetuate it by planting the fruits of his toil, with an inward conviction that what gives pleasure to us may—who knows—also give pleasure to him. *Neville Cooper, Vernon Holme, Canterbury.*

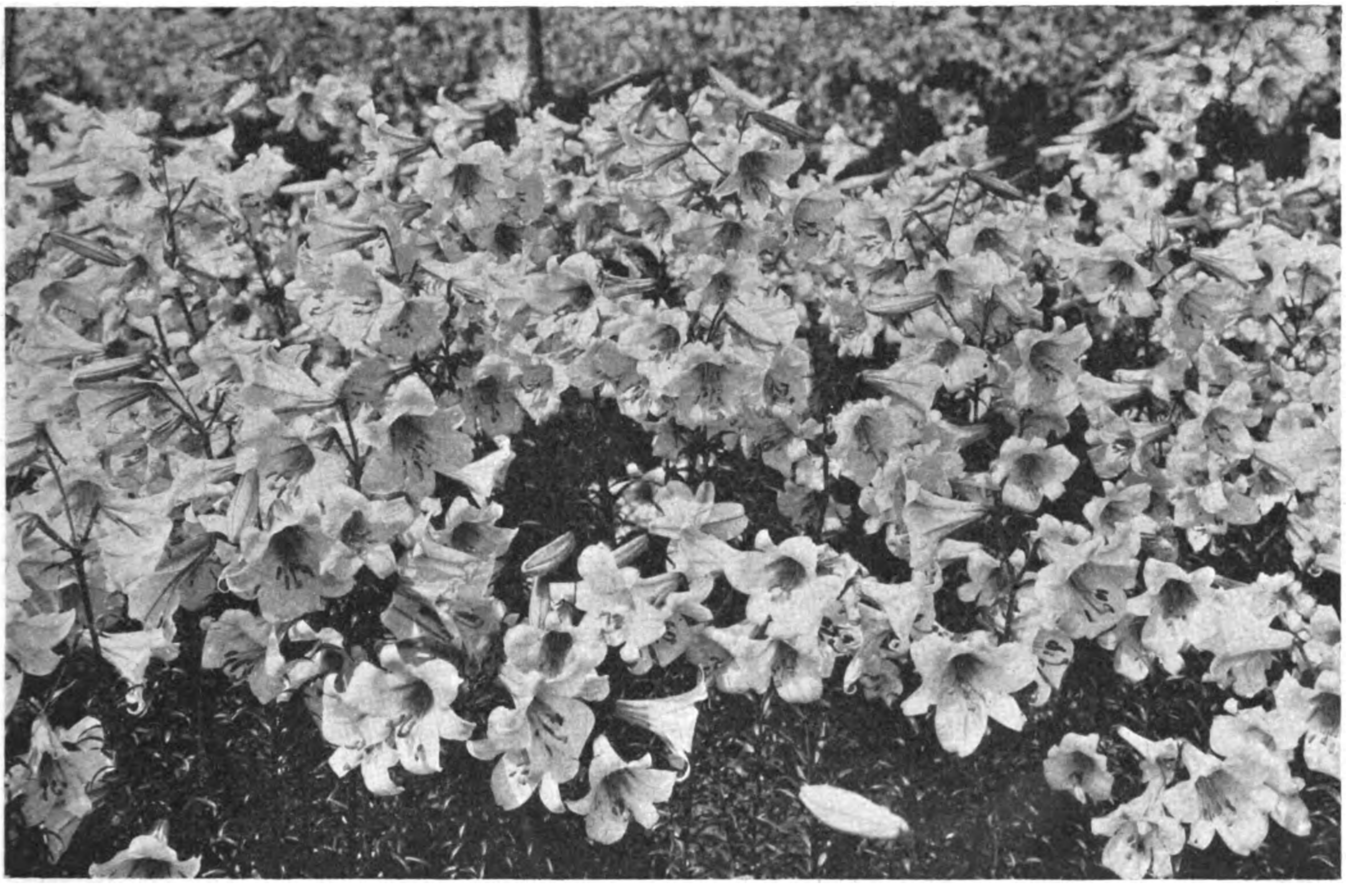

FIG. 120.—VIEW IN A FIELD OF 10,000 PLANTS OF LILIUM REGALE, AT GREENBRAE, SEATTLE, U.S.A.

LILIES IN THE UNITED STATES.

So much has been written regarding Lilium regale that I send a photograph (Fig. 120) of a field which will give you an idea of how this Lily thrives in the north-west of the U.S.A. As a matter of fact, this species does well everywhere, but only in a few places is it produced in large quantities. The photograph was taken at the Greenbrae Gardens, owned by Mr. F. S. Flickenger, at Seattle, Washington ; he grows nothing but Lilies, and is handling a number of the hardy kinds including L. candidum, L. Grayii, L. Henryii, L. Humboldtii, L. pardalinum, L. Washingtonianum, etc.

The climate being so mild at Seattle, Mr. Flickenger is also growing large quantities of L. longiflorum, raised from seeds, selected forms of which he is already supplying to Lily forcers, who consider the stock is little, if any, more variable than the Japanese stock, and infinitely more vigorous and prolific. This I can quite believe, for he would probably not dry off the bulbs to the same extent as the Japanese have to.

As indicating how well he is progressing, I may state that the batch of L. regale illustrated (Fig. 120) is from seeds sown two-and-a-half years ago, now mostly four feet tall, and bearing up to fifteen blooms on a stem. Something like ten thousand are in this block, and in addition, Mr. Flickenger has another flowering batch of 35,000, one-and-a-half-year old plants, besides a greater number of younger seedlings. Moreover, this year he has sown five pounds of seeds, all hand-fertilised. I have a batch of plants raised from his seeds which came up like grass.

Of two-and-a-half-year-old L. longiflorum, Mr. Flickenger has flowered 20,000 this season.

Mr. Karl Baum, of Knoxville, Tennessee, also grows huge quantities of L. regale, but he has never been able to grow enough to meet the demand.

The bulbs sold here average about one to one-and-a-half inch in diameter, two-years-old, but Mr. Baum told me he once saw some year-planted bulbs that were up to the popular L. longiflorum standard—seven inches to nine inches.

I am under the impression that in the eastern States this Lily deteriorates after a time, and certainly does not multiply. Oddly enough, one-year seedlings produce many offsets, but these do not appear to grow so rapidly as seedlings. I have a number of bulbs, now four years from seed, but, so far, they have not increased. However, as I have hundreds of seedlings and bulblets of varying sizes, I do not worry.

A rather interesting hybrid Lily I have but which failed to flower this year is a cross between L. Leichtlinii × L. Batemanniae. The flowers I have seen of it have the colour of the latter species, but the shape varies somewhat and the blooms have the spots of L. Leichtlinii. It was raised a few years ago by the late Mr. E. H. Horsford, of Vermont, who had much success with Lilies, despite the fact that the winters there are very severe. The density of the snowfalls there probably makes it easier to grow many things that are a sore trial here in this district. My L. Leichtlinii hybrid made leaf or stem bulbils this season, due to non-flowering I imagine, although L. tigrinum splendens produces innumerable bulbils annually, the stems rising six feet or more. My three-year bulbs from self-sown bulbils, growing in an east border that never gets the sun, because it is between two houses, had stems fully an inch thick at the base. *T. A. Weston, Hillside, New Jersey, U.S.A.*

PUBLIC PARKS AND GARDENS.

Torquay, the charmingly-situated Devonshire watering-place, is favourably sheltered from the cold winds, making the successful cultivation in the public parks and gardens of a very large number of tender and half-hardy plants possible. The deep, red soil, formed by the breaking down of the Devonian red sandstone, is admirabbly adapted to the requirements of almost all subjects, the one objection, I am informed, being its binding, clay-like properties during hot, dry weather.

Torquay is justly famous for its luxuriantly developed Cordylines, their tropical beauty and glorious setting calling for general admiration from all those privileged to view them.

The catering for games is admirably provided by the Parks Department in the provision of numerous hard and grass tennis courts, football and cricket pitches, bowling greens and miniature golf grounds. The last-named appear to be very popular and in great demand: indeed, so continuous and persistent is the rush, the grass is apt to be totally worn-out and destroyed. Of the several bowling greens, one by the sea-front is worthy of special mention as being unique, by reason of the line of large Cordylines in the border at each end.

Visiting the new Abbey Gardens, I was impressed by the glorious display of Antirrhinums arranged in panels of colour throughout the beds of the sunken formal garden. The scheme is a large one, requiring so many as 10,000 plants to complete the beds. Beds of Verbena venosa, interspersed with Gladiolus primulinus Orange Brilliant, were very effective, and the long border of mixed Dahlias was early in flower, forming a great attraction to the public. Small arrangements of rock-work provided accommodation for many interesting subjects, including splendid flowering plants of Romneya Coulteri, Cytisuses, dwarf Conifers, Cistus, alpines, etc. A clean, clear pool of water is the home of various Nymphaeas, and fine healthy clumps of Arum Lilies, while prominent on the waterside are many beautifully coloured spikes of Tritoma. The recent acquisition of this lovely park by the Council has added considerably to the many features of this holiday resort.

The walk through the Cliff Gardens is of great interest and pleasure to one acquainted with the remarkable variety of choice and tender shrubs thriving there. Fine examples of the following plants were noted: Stauntonia latifolia, Viburnum rhytidophyllum, V. Carlesii, Pittosporum eugenioides, P. tenuifolium Mayi, Genista fragrans, twelve feet high, Phoenix canariensis, Callistemon (Metrosideros) lucidus, C. linearis, Sophora tetraptera, Eucalyptus Globulus, a fine specimen and fruiting freely; Acacia armata, A. longifolia, Salvia coccinea, five feet high; Romneya Coulteri, Embothrium coccineum, Teucrium fruticans, Leucadendron argenteum, and a fine plant of Brachyglottis repanda. The white Marguerite and the Calceolarias become quite woody subjects in this congenial spot, many of which have attained a height of four feet. The remarkable and rapid growth of the New Zealand climber, Muehlenbeckia complexa, is astonishing, as it has not only already effectively draped a considerable area with its light, dainty foliage, but if left unmolested, will tend to choke and smother all other plants likely to impede its speedy progress up the steep side of the cliff.

The Princess Gardens are notable for a number of fine Cordyline australis. My visit was not timed for the flowering period, but readers of *The Gardeners' Chronicle* will remember the photograph, which appeared in the issue for July 3 last. Here, too, are huge plants of Phormium tenax and its variegated variety. Free and effective use has been made of that excellent seaside plant, Escallonia macrantha for the formation of hedges, and trees such as species of Pyrus and Prunus have been planted during recent years for floral display in spring.

Torwood Garden is situated on undulating ground a little distance out of the town. An unusually fine specimen of the Cork Oak, Quercus Suber, is found here, together with a large plant of the uncommon Fuchsia devoniensis. The beds and borders were bright with Pelargoniums, Begonias, Pentstemons and Antirrhinums.

In addition to the general management of the parks, the Department controls considerable lengths of walks along the side of the cliffs, from points of which some of the finest views in the county are to be obtained. These walks require careful and diligent survey owing to the continual falling away of the sides into the sea.

The planting of trees for the beautification of the roadways is disappointing, little having been attempted beyond the use of such ordinary subjects as Planes, Elms, and Horse Chestnuts. It is regrettable the Plane should have pride of place along the roadway by the sea-front, in such a favoured locality, having regard to the possibility of the successful cultivation of choicer and more ornamental subjects. Where vacancies have occurred, experiments have been made with the Almond but, owing, presumably, to the difficulty of obtaining trees of this type with sufficient length of stem suitable for street planting, these appear short, badly-balanced specimens.

I regret that lack of time did not permit a thorough inspection of all the parks and grounds controlled by Mr. F. G. Cousins, the Superintendent, but, judging by the area covered, he has a most interesting and responsible charge, and one full of possibilities. *H. G. King, 109, Copleston Road, Peckham, S.E. 15.*

REMARKS ON THE CONDITION OF THE FRUIT CROPS.

(See Tables and Summaries, Ante, pp. 111-117.)

(*Continued from p.* 235.)

ENGLAND, S.

Berkshire.—Apple trees were laden with blossom, but owing to high winds and wet, cold weather very few fruits set, except on espalier trees, which are carrying an average crop. Gooseberries were above the average in numbers and the bushes are free from insect pests. Black Currants were a failure. Insect pests have been very troublesome, and I have experienced great difficulty in keeping the trees and bushes clean. *Stanley R. Gammon, Farley Court Gardens, Farley Hill, Reading.*

——What promised to be a really good fruit year was spoiled by the cold, wet, sunless weather which prevailed during the greater part of the flowering period. Apple trees especially gave great promise, but two or three night frosts together with the conditions mentioned above destroyed practically all the blossom. These same frosts destroyed the early Strawberry flowers. Most of the other small fruits weathered these adverse conditions very well, but aphis has been very troublesome and several sprayings have been necessary to clear the trees. *Edward Harriss, Lockinge Gardens, Wantage.*

——Apple trees here in these gardens flowered very freely and looked very promising, but I think the heavy rains we had during the setting period spoilt the prospects. Pears are a good crop. Black Currants were a failure; the bushes were almost stripped of their leaves early in the season, but we sprayed and saved them from all dropping. The soil is a heavy loam on a clay subsoil. *J. Kitt, Wasing Place Gardens, near Reading.*

——The Apple crop in this district is practically nil, especially on trees in exposed positions; there was a wealth of bloom but the cold winds and frosts of May destroyed the prospects of a heavy crop. In these gardens we have good crops on espalier and bush trees, these being sheltered from the wind. Pears are a good, clean crop. The trees were sprayed after they had set their fruits with Bordeaux mixture to prevent black rot. All bush fruits were good. Rains cleaned the Black Currants which produced some fruits of small size. Raspberries were a full crop. All other fruits are average crops, except Strawberries and Cherries, the failure of the former no doubt being due to a cold summer and wet autumn. Plants put out last spring did not grow, consequently Strawberries were very scarce. Cherries set well but the cold winds caused the fruits to drop. Apricots are a good crop and the trees clean. *A. B. Wadds, Englefield Gardens, Reading.*

——This is the most disappointing fruit season in my forty years' experience, after a wealth of blossom which gave promise of bumper crops. *Henry Butcher, Wyld Court Gardens, Hampstead Norris, Newbury.*

Dorsetshire.—Our soil is a medium loam, overlying chalk. Apples are a poor crop and the trees are attacked by scab and brown rot, especially the variety Bismarck. Pears are looking remarkably well and are, so far, clean. Plum trees are also clean and carrying very heavy crops. Peaches and Nectarines are carrying heavy crops of fruit and the trees are making very satisfactory growth. Apricots are our worst crop, having practically no fruits. Raspberries were fairly plentiful, and the new canes are making good growth. Black Currants were of good quality. Some bushes have suffered from aphis attack, whilst a variety of comparatively recent introduction, among the seven sorts we grow, has reverted so badly that I have decided to grub the bushes as being an unprofitable variety. Red Currants were fairly good, but, like the Raspberries, were attacked by birds more than usual. Loganberries were a clean, heavy crop. The quality of Strawberries was good, but many of the earlier flowers appeared to have been imperfectly pollenated. Outdoor Figs are below the average, owing to the young wood having been badly cut by frost during the past winter. Our gardens are situated in the bed of a valley, with shelter belts on the north and east. *H. F. Maidment, Crichel Estate Gardens, Wimborne.*

DORSETSHIRE.—The Apple crop in this district is very light and the fruits are still falling off. Many trees at the time of writing are losing their foliage. Some trees in sheltered positions are carrying a fair crop of clean fruits. This is a very disappointing season; fruits appeared to set but failed to swell. I put this down to hail-storms which we experienced in unusual numbers this spring. *W. E. Axford, St. Giles' Gardens, Salisbury.*

HAMPSHIRE.—Apple trees gave promise of good crops by the wealth of fruit buds, but on blooming, the trees experienced a trying time with low temperatures, much wind and wet and sunless days, consequently very few fruits set. The floral beauty was over in two or three days, a circumstance which always defeats a good "set." Pears bloomed profusely but experienced very cold northerly winds at the critical time, therefore the fruits had little chance of setting on trees in open situations. Plums that were cross-pollenated are a very good crop on walls, but the standard trees are only fair. Raspberries, Red Currants, Loganberries, Gooseberries and Strawberries were excellent. Our soil is a heavy, stony loam. *George Ellwood, Swanmore Park Gardens, Swanmore.*

——The fruit crops in this district are again very disappointing. Apples are a poor crop, especially dessert sorts; culinary varieties, such as Bramley's Seedling, Lord Derby, Annie Elizabeth and a few other sorts are an average crop. Pears are good and the fruit of good quality. Peaches and Nectarines are very good, but late. There has been scarcely any leaf blister this year. Strawberries promised well but the greater number of the early fruits were spoilt by continuous wet weather. All small fruits were very good, with the exception of Black Currants, which were badly infested with aphis. *A. J. Legge, Dogmersfield Park Gardens, Winchfield, Basingstoke.*

——In this district Apples flowered exceptionally early, but many varieties failed to set owing to unfavourable weather. Those bearing the best crops are Worcester Pearmain, Cox's Orange Pippin, Lane's Prince Albert, Northern Greening and Easter Pippin. Pears are an average crop, the best sorts being Williams's Bon Chrétien, Marie Louise, Louise Bonne of Jersey and Doyenné du Comice. Plums are also average crops, the quality being excellent. Both sweet and Morello Cherries were good. Peaches and Nectarines are exceptionally fine both in quality and quantity. Gooseberries, Currants and Raspberries cropped extremely well. Strawberries were an average crop, but the berries were decidedly above the average in size and flavour. The soil here is a heavy clay. *W. G. Osborne, Sutton Manor Gardens, Sutton Scotney.*

KENT.—Apples are practically a failure here, although most of the trees were a picture when in bloom, but late frosts and cold rains ruined the prospects of a good crop. Pears are an average crop and of good quality. Plums too, are good and more plentiful than of late years. Small fruits are excellent, with the exception of Strawberries, which were below the average and of poor quality. All fruit trees look very healthy and clean. Our soil is very heavy and cold. *H. Stevens, Fairhill Gardens, Tonbridge.*

(To be continued.)

FRUIT GARDEN.

GOOSEBERRIES.

OLD, scraggy Gooseberry bushes are never profitable, as the fruits produced do not attain their proper size and are generally flavourless compared with those produced by healthy, well-cared-for bushes. Young stock may easily be raised from cuttings, and a good number of bushes should always be in readiness to replace any that are past their best. Young bushes need plenty of room so that the air can circulate freely about them, and if they are given a good position and suitable soil they will develop into fine specimens and give crops of large, highly-flavoured berries.

From this date and onwards the heads may be thinned and cuttings prepared and planted from the prunings. Prepare and plant the latter rather closely and firmly on a north or west border.

Good varieties for the different purposes should be selected, including some that will furnish berries late in the season. *H. Markham.*

VEGETABLE GARDEN.

CAULIFLOWERS AND BROCCOLI ALL THE YEAR ROUND.

To produce good Cauliflowers and Broccoli for the table all the year round is not a simple matter; climate, soil, cultivation and the variety are all important factors. It does not seem to be generally realised that Cauliflowers and Broccolis each have their own seasons; thus one must not look for Cauliflowers in, say, February and March, nor must one look for Broccoli in July.

According to the text-books the season for Broccoli is from August to June, and that for Cauliflowers from May to December; but, for present purposes, we may take it that the season for Broccoli is from November to May inclusive, Cauliflowers taking their place from the end of May to the end of October.

I am, at present, not dealing with sowings made in frames or greenhouses, but refer to seeds sown out-of-doors only. For this purpose I recommend two seasons only: (1) March to April, and (2) the end of September.

Sowing in the open is preferable to sowing under glass during March and early April, where weather and climate are favourable, the resultant plants being much healthier and altogether sturdier and fit for transplanting at the right season.

Cauliflowers are sown during both periods, but Broccoli (with the exception of white and Purple Sprouting Broccoli) are sown during the first period only. The dates when the heads are ready depend on the variety. Winter White and Purple Sprouting Broccoli are both best sown in May to give heads during the early and late winter months respectively. *E. A. Saunders.*

EARLY TURNIPS.

IT is very disappointing to have a promising batch of early Turnips run to seed instead of bulbing. A check from frost, cold weather or dryness of soil is frequently blamed for this, but I think it is sometimes due to poorness of the ground.

To grow sweet, tender Turnips, the land should be in good heart and worked deeply, especially in spring and summer, so that the tap-roots may travel as deeply as possible in the cool, rich soil beneath.

Another point to be observed is to thin the seedlings early to prevent crowding, so that each plant may have ample room to develop quickly and not be drawn up weakly amongst crowded neighbours.

If suitable varieties are selected the roots will be ready for pulling in about eight weeks, according to the weather, for Turnips constitute a crop that requires plenty of moisture for its quick development. *H. Markham*

FISH AS MANURE.

I SHOULD like to call attention to the value of fish as manure, as it can often be obtained during the autumn and winter very cheaply at the different fishing ports.

The whole fish from glut catches may be utilised, while conversely the offal from fish-curing establishments, especially after the oil has been removed, is a most valuable, slow-acting manure. Fish, as a rule, contains very little potash, but phosphates are abundant, and as a rule there is a very fair proportion of available nitrogen. Most horticultural chemists regard fish as a purely phosphatic fertiliser, but in my opinion it would be better to term it a nitro-phosphatic soil enricher.

Experiments have shown that fish manure suits very many different crops. Good results have been obtained by using it for all the members of the Pea and Bean family, including most of the Leguminous flowers. For the Cabbage tribe fish proves a very excellent soil enricher, while for purely maritime plants such as Asparagus, Seakale and Celery, it gives, as might be expected, excellent results.

Both the fish from glut catches and the refuse from canning establishments putrefy extremely readily, and then emit a most powerful and offensive odour. No attempt, therefore, should be made to store the material for long, but on the contrary, arrangements should be made to dig it in immediately each consignment is delivered.

Both forms of fish may be mixed with five or ten times their own bulk of fresh fermenting farmyard manure, and used thus they are less offensive and more easy to apply. Where fish refuse has to be kept for some reason, it should be made into a pile mixed with a large excess of garden soil, and a covering of soil at least six inches in thickness should also be applied. As to the amount to apply, this naturally depends to some extent on the particular soil one is dealing with. About two hundredweights of fish from glut catches or fish offal may be used per square rod, but at least double this quantity should be employed if it is let down with any diluent, such as farmyard manure. Early winter application gives the best results, and whether the fish is used raw or mixed with other materials it should be buried at least one foot below the surface of the soil.

Dried fish is sold in several forms as a manure. This, however, is more suitable as a spring dressing than a winter one, and need not be considered in the present article. *E. T. Ellis.*

HOME CORRESPONDENCE.

[The Editors do not hold themselves responsible for the opinions expressed by correspondents.]

Lilium philippinense var. formosanum.—I read with great interest Mr. Grove's article in your last issue on the subject of Lilium philippinense var. formosanum. Here we grow only the variety collected by Mr. Elwes from seed given us by him. With us, in beds outdoors (both in sun and shade) it grows three feet or three feet six inches high, and has not more than three flowers, but planted out in a very hot and sunny, but unheated Peach-house, bulbs from the same seeds send up growths seven feet to eight feet high with six or seven flowers on them. This Lily is, however, such a late starter in the spring, here at any rate, that there is no question of the frost affecting the young growths, and there is no obvious reason for the lessened vigour it shows outdoors. I recently saw, growing in Scotland, plants of Price's dwarf form, and these, with their single flowers and short stems, looked much more like the old L. philippinense which we once grew but which proved very tender and soon disappeared. *Henry D. McLaren, Bodnant, Tal-y-Cafn, N. Wales.*

ROYAL HORTICULTURAL SOCIETY.

EXHIBITION AT HOLLAND PARK HALL.

September 21, 22, and 23.

THIS great autumn show was quite up to the general standard of excellence and rather more colourful than usual. As viewed from the gallery the general effect was scarcely so pleasing as at some previous shows, probably because fewer tall subjects were displayed in the central portion of the great hall. Mr. Russell's Tree Ferns provided a graceful central feature and a rather uncommon one. Roses were a particularly fine feature, while the groups of Orchids, Carnations, Dahlias and Chrysanthemums added brilliant colour to the scene. Although hardy flowers were exhibited freely they did not contribute such gay colouring as the florists' flowers referred to above, for, beautiful and useful as the Michaelmas Daisies are, they have a sombre effect when closely grouped where there is very little top light.

The great hall was well filled, numerous exhibits were refused and many others reduced in extent. The Coronation Cup was not awarded.

Novelties were few and, with one or two exceptions, not impressive. Those which obtained awards were grouped on one side of a long table, together with the Dahlias selected for trial at Wisley, and an overhead sign directed visitors to them.

The attendance on the opening day was good.

Orchid Committee.

Present: Sir Jeremiah Colman, Bt. (in the chair), Mr. Gurney Wilson (Hon. Sec.), Mr. R. G. Thwaites, Mr. S. W. Flory, Mr. E. R. Ashton, Mr. H. T. Pitt, Mr. Robert Paterson, Mr. R. H. Smith, Mr. W. H. Hatcher, Mr. Charles H. Curtis, Mr. John C. Cowan, Mr. J. E. Shill, Mr. Fred K. Sander and Mr. H. G. Alexander.

Awards of Merit.

Laelio-Cattleya Profusion, Stamperland variety (L.-C. Subia × C. Hardyana).—A handsome hybrid represented by a plant carrying four large blooms. The broad petals and sepals are clear, rich mauve, and the big lip is intense crimson-purple, with dull gold basal blotches and gold veining in the throat. Shown by Mr. Robert Paterson, Cathcart, Glasgow.

Cattleya Lorna var. Empress (gigas, var. Frau Melanie Beyrodt × Enid alba).—A beautiful variety, with flowers of fine substance. The sepals and petals are white and the showy lip has a white tube, a clear, golden-yellow throat, and rich purple, white-edged lip. Shown by Messrs. Black and Flory.

Cattleya Mimosa var. Golden Queen (triumphans × Venus).—In form, colour and texture this is one of the finest of autumn-flowering Cattleyas. The very wide petals and narrower sepals are of lovely nankeen yellow colour, and the frilled lip is ruby-coloured with paler margin, and golden veins at the base. Shown by Messrs. Cowan and Co.

Cattleya General Maud var. splendens (L.-C. Rubens × C. Hardyana). In this large-flowered and handsome Orchid the sepals and petals are rich mauve-purple, and the frilled lip royal-purple, with ruby-crimson shading towards the gold-veined throat. Shown by Messrs. Cowan and Co.

Brasso-Laelio-Cattleya C. W. Matthes (C. Maggie Raphael alba × B.-L.-C. The Baroness).—An attractive hybrid of good substance and bright colouring. The flowers are of medium size with light chrome-yellow sepals and petals, and a wide, frilled lip, that is deeper yellow with an orange tint and has a cerise edging; there is also a reddish cerise stain in the centre of the lip. Shown by Messrs. S. Low and Co.

Groups.

Messrs. Cowan and Co. used Odontoglossum grande as a central feature, and around this showy Orchid grouped Cattleya Harold var. alba, Laelio-Cattleya Hassallii alba, the yellow-petalled C. Mimosa, L.-C. General Maud var. splendens, with rich purple lip; C. Sibyl, C. Fabia, L.-C. Mrs. Medo (C. Venus × L.-C. luminosa), Odontoglossum crispum xanthotes, and a fine example of the gold and ruby-coloured Cattleya Mimosa var. Golden Queen. Dendrobium Phalaenopsis made an elegant background for this bright display, and Cirrhopetalum Rothschildianum was a particularly interesting plant in it.

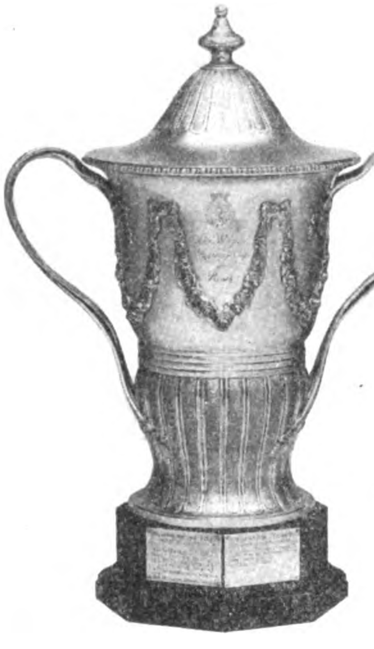

FIG. 121.—WIGAN CUP FOR ROSES.

Messrs. Black and Flory contributed a very pretty group of Orchids in which white-petalled Cattleyas were conspicuously good. These included C. Hardyana alba, C. Lorna in variety, C. Etta, C. Eleanora alba, and C. Marlow (Jasper × gigas Frau Melanie Beyrodt): in addition there were capital specimens of C. Sunstar, C. Lysander, C. Aeneas var. Oriens, L.-C. Carmencita aurea, L.-C. Jean, and L.-C. Princess Mary (L.-C. Thyone × C. King George), all with yellow petals—altogether a very attractive exhibit.

In Messrs. Stuart Low and Co.'s group of Orchids there were several very interesting Orchids in addition to the brighter and larger-flowered hybrids: there were Cypripedium Fairrieanum, Aeranthus grandiflora, Saccolabium Blumei, Phalaenopsis violacea, Oncidioda Cora (Oncidium incurvum × Cochlioda Noezliana), Paphinia cristata, the lovely little Sophronitis grandiflora and Vanda coerulea.

Floral Committee.

Present: Section A.—Mr. Henry B. May (in the chair), Mr. F. J. McLeod, Mr. H. R. Darlington, Mr. D. B. Crane, Mr. H. J. Jones, Mr. A. Vasey, Mr. J. T. West, Mr. D. Allan, Mr. Arthur Turner, Mr. W. B. Gingell, Mr. Hugh Dickson, Mr. N. C. Allwood, Mr. F. G. Cousins, Mr. Chas. E. Pearson, Lady Beatrix Stanley, Mrs. Helen Lindsay Smith, Mrs. Ethel M. Wightman and Mr. James B. Riding.

Section B.—Mr. Charles T. Musgrave (in the chair), Mr. W. G. Baker, Mr. W. J. Bean, Mr. W. B. Cranfield, Mr. F. G. Preston, Mr. G. Yeld, Mr. G. Reuthe, Mr. James Hudson, Mr. R. C. Notcutt, Mr. G. Tandy, Mr. A. Bedford, Mr. Amos Perry and Mr. Clarence Elliott.

First Class Certificate.

Amarcrinum Howardii.—This beautiful, pink-flowered bigeneric hybrid was fully illustrated, and described, and its history detailed, in *The Gardeners' Chronicle* of November 21, 1925. It is the result of crossing Amaryllis Belladonna with Crinum Powellii, the former being the seed parent—and the raiser was Mr. F. Howard, Los Angeles, California. On this occasion a plant exhibited carried a head of ten flowers and buds; the shape of the flowers betrayed the Amaryllis parent, while the growth and leaves approximated to those of the Crinum, although much more slender. Shown by Mr. T. Hay, Hyde Park.

Awards of Merit.

Berberis Thunbergii atropurpurea.—Said to be of French origin, this shrub is certainly very beautiful by reason of the rich red colour of its leafage. The colour is almost as bright in the young leaves as in the old. The varietal name is not a happy one as it suggests purple colouring. Shown by Mr. Amos Perry.

Salvia Bluebeard (?).—The award to this plant was given subject to name. The card attached indicated that the Salvia has been called Bluebeard but was unknown to Dr. Stapf. The flowers are deep violet-blue and carried in eight-inch to ten-inch spikes, after the style of S. patens, but the individual blooms are smaller than those of this popular species. The subcordate leaves are deeply veined, deep green and crenately margined. The plant withstood the winter of 1925-6 at Ascot. If free-flowering, it should prove a useful garden subject. Shown by Mrs. P. Marteneau, Ascot.

Aster Ruby Tips.—An erect-growing, dark-stemmed, semi-double variety, with an abundance of mauve-pink-coloured blooms, the tips of the florets being of slightly deeper colour, while the unopened buds are distinctly reddish-purple. As shown, we could find no evidence of ruby colouring, such as the name suggests, nevertheless it is a good Michaelmas Daisy. Shown by Mr. E. Ballard, Colwall.

Solidago Ballardii.—An elegant, plumose Solidago producing an elongated pyramidal and loosely-branching head. The flowers are as usual, small, and of clear yellow colouring. Although the cross on the card attached suggested that this plant is a hybrid, no information was given in regard to parentage. Shown by Mr. E. Ballard.

Clerodendron foetidum.—A native of northern China, where it was discovered and described by Bunge, although it appears to have been introduced to cultivation by Robert Fortune. When first grown in this country it was cultivated as a greenhouse plant until it was pointed out in *The Gardeners' Chronicle* (1854) that a plant had stood out in the open, unharmed, for six winters at Canterbury. At Kew it is killed back to the ground almost every winter but grows again and reaches the height of six feet in summer. The cordate leaves are about eight inches wide and long, on purplish pedicels. The stems are also reddish-purple. The flowers' borne in rounded corymbs, are rose-coloured the buds being vinous red. The flowers are fragrant, but the odour of the crushed leaves is offensive, hence the specific name. Shown by by Mr. G. W. S. **Loder**, Ardingly.

Scolopendrium vulgare sagittatum crispum cristatum Perry's var.—An awful name for a really good, dwarf, sturdy, cristate and frilled form of the Heart's Tongue Fern. Shown by Mr. A. **Perry**.

Chrysanthemum Peerless.—A bright golden-yellow single variety suitable for garden decoration. Shown by Mr. A. W. **Thorpe**, Lichfield.

Chrysanthemum Janet Wyber.—A primrose-coloured sport from the popular early-flowering Miss G. K. Thorpe. Shown by Mr. A. W. **Thorpe**.

Chrysanthemum Madeline.—A double-flowered early variety of clear canary yellow colour. Shown by Mr. A. W. **Thorpe**.

Botanical Certificate.

Biarum eximium.—A small, Cilician species, with a flattened tuber and six-inch spathes of dark maroon-purple colour. The spadix is brownish, and the whole inflorescence is at first enclosed in a membranous white sheath. Shown by Mr. **Amos Perry**.

Dahlias.

There were many imposing collections of Dahlias in the hall and while for the most part the varieties were similar to those we have admired at Vincent Square, there were additional exhibitors and the blooms were especially beautiful.

Messrs. **Dickson and Robinson** had an especially graceful collection of Dahlias. The body of the group was composed of tall stands of choice blooms and there were baskets suspended from the back. The large decorative varieties were very striking and these included Augustinus, Turenne, Pax and Insolinde. The graceful miniature Paeony-flowered varieties were represented by Pink Pearl, Peggy, Topsy, and Lovely.

A handsome collection displayed by Mr. **Jas. B. Riding** included many decorative varieties of medium to large size and of excellent habit, of these we selected Pride of San Francisco, Hedge Rose, Earle Beauty, Rayon Rouge, Noble, Colour Queen and Uncle Dick as being especially valuable. Messrs. **Wm. Treseder, Ltd.**, had good decorative varieties in Mabel Lawrence, F. H. Turnbull, Jersey Beauty and Couronne d'Or.

As at the Hall in Vincent Square a fortnight ago, Mr. H. J. **Jones** arranged an exceedingly artistic group of Dahlias. While he used the same fascinating little gilt baskets for the front rows, the schemes were changed. On the present occasion there were charming associations of orange and orange-scarlet in My Treasure and Christine Prior, while the mauve Emma Groot and the maroon King Harold were equally effective. In the large stands there was a vivid mass of Jersey Beauty, a salmon-coloured large Decorative Dahlia of great value.

A magnificent group of Dahlias was arranged by Messrs. **Dobbie and Co.** Vivid, glowing colour was provided by large vases of President Wilson, a large Decorative variety; Dazzle, small Paeony; Amos Perry, Cactus; and Crimson Flag, a small and shapely Decorative. Lovely pink colour was shown in Our Annie and Doreen, small Paeonies; Dunrobin, Collerette; Seafield, a Star variety; and Ben Leon, a small Decorative. Messrs. **Wm. Cutbush and Son** displayed, on a floor space, various Dahlias of decorative value.

The **Central Garden Supplies** had a good collection, particularly of the miniature Paeony-flowered varieties, next to their rock garden. The Dahlias included Mae, Trixie, Mary, Fairy, Nancy, Lucina and Cherry. The miniature Paeonies were also well shown by Mr. **Charles Turner**, who had lovely vases of Nora Bell, Pink Pearl and Our Annie of this type, while his large Decoratives included Border Perfection, Mrs. Warnaar, Emma Groot and Augustinus. Giant-flowered Decorative and graceful Cactus varieties were well displayed by Mr. H. **Woolman**, with a few vases of Chrysanthemums. His Cactus varieties included Sydney Jones, Ballet Girl and Mary Murray. Messrs. D. **Prior and Son** had a graceful collection of Pompons and miniature Paeonies in vases, and a few blooms of Show and of Decorative varieties on exhibition boards.

In addition to well-grown flowers of miniature Paeony and Decorative varieties, Mr. J. T. **West** showed excellent blooms of Cactus Dahlias. The chief varieties were Ullswater, of glowing colour; Winter Sun, a scarlet and yellow miniature Paeony; and Rachael Troughton, Grasmere, Pixie and Satisfaction, Cactus varieties. Mr. H. **Hemsley** associated Dahlias with species of Vitis, various succulent plants and Alpines in pots.

A splendid collection of Dahlias was shown by Messrs. **Jarman and Co.** The Cactus sorts, which included Edgar E. Jackson, Joyce Goddard and Mary Purrier, were especially good, as also were such Collerettes as Rapallo, Scarlet Queen, John Brown and Papyrus. Messrs. **Carter Page and Co.** included Border King, Fascination and Christine Prior, Cactus varieties; Mrs. Stenington, Lucina, Dazzle and Moorkop, miniature Paeonies, in a good collection of Dahlias.

Some of their recent varieties were artistically arranged by Messrs. **James Stredwick and Son**. The large Decoratives included Alan Cobham, Mabel Lawrence, Berengaria, Marie King, Titan and Evelyn Hancock.

Stove and Greenhouse Plants.

A large group of magnificently grown Codiaeums (Crotons) was exhibited by A. P. **Brandt**, Esq. (gr. Mr. J. W. Banks), Blechingley, Surrey. Not only did the many plants display high class cultivation, but the arrangement was especially effective. Amongst the numerous varieties we especially noted Juliet Russell, Dayspring, Montefortensis, Massangeanum Reidii, Puciana and aigburthensis.

Well-grown Caladiums were successfully grouped with Palms, Codiaeums, Humea elegans and Streptocarpus by Messrs. **John Peed and Son**. The chief Caladiums were Robert de Neuforlle and John Burns, which have deep red leaves, Improved Valse Bleu of rich colouring, Streatham Pride and Dorothy Hodgson of transparent loveliness. The Streptocarpus which margined the group constituted an admirable strain of this valuable greenhouse plant.

In the centre of the hall Messrs. L. R. **Russell Ltd.** had a group of Tree Ferns raising above various Bromeliads and other lowly plants. The Tree Ferns were mostly excellent specimens of Dicksonia antarctica, with two slender-stemmed Cyathea dealbata, and these, planted on an undulating mound were singularly effective. The lowly plants included various species of Sansevieria, Maranta Closonii, Calathea ornata (Marantha regalis) Aechmea fasciata (Bilbergia rhodocyanea) and Begonia Rex varieties.

An interesting exhibit of Cacti and allied plants was arranged by Mr. **Sydney Smith**. These were mostly small plants in pots and included good examples of Mammillaria perbella, M. sempervirens, M. rhodantha, Echinocactus Grusonii, E. crispatus, Echeverias, Stapelias, Haworthias and Cotyledons in variety.

Adjoining their exhibit of Orchids Messrs. **Stuart Low and Co.** grouped Bouvardias with Erica gracilis, E. nivalis and Chironia exifera, with a background of Cannas of good varieties, The Bouvardias included President Cleveland, scarlet; Humboldtii corymbiflora, large, fragrant, white flowers; Priory Beauty, pink, and Bridal Wreath, blush-pink.

In a large circular group Messrs. J. **Carter and Co.** tastefully displayed largo quantities of Lilium speciosum Melpomene, L. s. Kraetzeri, Clerodendron Fallax, Gladiolus, Begonia semperflorens in several varieties, and many Asters surrounded by a band of fresh green grass of excellent texture and enclosed by plants of Asplenium bulbiferum.

Messrs. **Blackmore and Langdon** contributed their customory collection of splendid double-flowered Begonias. Chief amongst the many varieties were Albatross, white; Lady Cory, orange; Mary Newman, yellow; Queen of the Belgians, rose; John Mercer, deep orange; Mabel Langdon, pink, and Cissie Cuthbert, blush picotee-edged. In the centre there were several plants of the showy Begonia crispa marginata and there were hanging baskets of Golden Shower, pale orange; Alice Manning, yellow, and Lena, red.

In association with his border flowers Mr. R. J. **Case** showed trusses of Zonal Pelargoniums, both double and single-flowered. The chief of the latter were Chavarri Hermann, scarlet; Olympia, pink; Drummer Boy, red; Staplegrove Pride, pale pink; and Gwendoline Lysley, salmon.

Chrysanthemums.

Just below the Music Gallery, Messrs. **Putteridge, Ltd.**, had a large collection of early-flowering Chrysanthemums. Their principal varieties were Mrs. Jack Pearson, orange-bronze; Phoenix, of similar type but richer in colour; Hollicot Yellow; Pink Delight, Cranford Cream and Almirante, reddish chestnut. These were mostly shown as flowers of the type valued for market sale and made a very attractive display.

In the body of the hall Messrs. **Keith Luxford and Co.**, arranged a similar display with some vases of disbudded blooms. Amongst their many varieties they included T. Bannister and Miss Mattie, yellows; Framfield Early White, Provence, pink, Lichfield Peach, Red Almirante and Cranford Yellow.

Mr. **William Yandell** had a considerable exhibit of Chrysanthemums which included Salmon Profusion, Dick Barnes, wine-red; Dorothy Ashley, pink; Harvester, yellow; and Mrs. Jack Pearson, orange-bronze. Mr. H. **Woolman** and Messrs. **George Bunyard and Co.** included some Chrysanthemums with their exhibits of other flowers.

Gladioli.

Gladioli were freely shown, both as separate exhibits and in conjunction with other flowers. A particularly graceful display was arranged by Messrs. **Austin and McAslan**, who had large vases of Golden Measure, Red Canna, Maréchal Foch, Red Emperor, princeps, Orange Nassau and Baron Hulot, while along the front they placed exceedingly pretty bowls of Orange Brilliant, La Bethune, Loriot, L'Exuette and other Primulinus varieties.

The large-flowered varieties shown by Messrs R. H. **Bath, Ltd.**, included Red Emperor, Lucette and America, while Asia, Alice Toplady and Rosanra are typical of their Primulinus varieties. Messrs. **Daniels Bros.** associated vases of Gladioli with a large collection of hardy herbaceous flowers. Messrs. **Lowe and Gibson** set up a small collection of their seedling Gladioli with Delphiniums, and the Orpington Nurseries associated Gladioli with various hardy shrubs.

Mr. A. **Edwards** set up an attractive collection of Gladioli both of the large-flowered and the Primulinus hybrids.

Roses.

The displays of Roses were so numerous as to make them the predominant feature of the show. The entries for the Wigan Cup numbered eleven and as each collection was allotted a space of fifteen feet by six feet it required the whole of one side of the hall under the gallery to accommodate them.

The displays were chiefly of the same style of arrangement—columns and pillars with a ground of, in most cases, as many varieties in vases as the space would hold.

The Cup (Fig. 121) was awarded to Messrs. **S. McGredy and Son** for an exhibit of grand quality and delightfully arranged. In the centre was a basket of White Ensign relieved with sprays of Rosa sericea pteracantha. There were other beautiful baskets of Roses along the front, in which the flowers were arranged along the handles, and the edge of the exhibit was drooped with overhanging bunches of such sorts as Independence Day, Ophelia, Mrs. Barraclough, Lady Roundway and Frau Karl Druschki. Towards the back of the exhibit were columns of fine blooms of a number of choice varieties, whilst the limits of the exhibit were composed of grand columns of Mrs. H. Morse, Madame Butterfly and Betty Uprichard.

Messrs. **Alex. Dickson and Sons, Ltd** showed Roses of exceptional quality, several in baskets with the handles decorated with blooms, one of Dame Edith Ethel being very imposing. A basket of Scarlet Glory was very good, and another of Shot Silk is worthy of mention. Mr. **Thomas Robinson,** Nottingham, had a fine pillar of Golden Emblem in an exhibit of much excellence. Messrs. **Wheatcroft Bros.**, Gedling, Nottingham, had a beautiful basket of Los Angeles as a centre-piece to their fine exhibit of Roses, in which Hoosier Beauty, Mabel Morse and Mrs. Henry Morse figured conspicuously. Messrs. **D. Prior and Son** showed columns of such sorts as Mabel Morse, Lady Inchiquin and Ophelia, with big posies of Elsie Poulsen, Hugh Dickson, Los Angeles, Etoile de Hollande and Golden Emblem. Messrs. **A. Warner and Sons** showed shall posies of such pretty Roses as Mme. Buttefly, Sovereign, The Queen Alexandra Rose and Emma Wright. Messrs. **B. R. Cant and Sons, Ltd.**, had a beautiful exhibit of Roses, in which Madame Butterfly, Covent Garden, Florence L. Izzard, Mrs. Henry Bowles and Mrs. Beatty were conspicuous. Mr. **John Mattock**, New Headington, had a pretty basket of Golden Emblem as a centrepiece to his fine exhibit of Roses in the Wigan Cup Class. Mr. **J. H. Pemberton**, Havering, showed numerous varieties of his raising, such as Penelope, Pax, Vanity, Cornelia and Kathleen of the hybrid-Musk type and perpetual flowering. Messrs. **Chaplin Bros.** arranged all their blooms as columns of Roses and the effect was good. Mr. **G. Prince**, Oxford, had some fine baskets as well as pillars of Roses of popular sorts. Mr. **Elisha J. Hicks**, Twyford, contributed a a fine exhibit to the numerous Rose displays; the blooms were on the small size owing to drought, but representative of the best sorts for gardens. Messrs. **Wood and Ingram,** Huntingdon, showed the new Rose Angele Pernet, a coppery-salmon variety with handsome, glossy foliage. Mr. **T. Hancock,** Mansfield, showed Charming Princess, a new variety of rosy red colour with a clear gold base. The buds are very pretty. Messrs. **Walter Easlea and Sons**, Eastwood, showed popular varieties of Roses such as Betty Uprichard, Etoile de Hollande, Hadley and Mabel Morse. Mr. **J. C. Allgrove,** Middle Green, Langley, Slough, showed Rosa Moyesii in fruit better, perhaps, than ever before. Mr. **W. E. B. Archer**, Sellindge, Kent, showed his fine hybrid Tea Rose, Dainty Bess, a single variety of salmon-pink colour that received the N.R.S. Gold Medal in 1925.

CARNATIONS.

Messrs. **C. Engelmann, Ltd.**, Saffron Walden, arranged a great bank of Perpetual-flowering Carnations on staging, representative of the very choicest sorts. The blooms were of the finest quality and the colours arranged with harmony so that the general effect was grand. Red Laddie, Saffron, Dorcas, Rouge, White Wonder, Zorro and Cupid are all varieties of the highest excellence.

Messrs. **Allwood Bros.** displayed Carnations of the Perpetual-flowering type and a selection of Dianthus Allwoodii. This imposing exhibit was arranged on a terraced stand covered with black velvet. Conspicuous as a centre-piece was a huge sheaf of the delicate pink Laddie and on either side of this were columns of the scarlet varieties Spectrum and Edward Allwood. The remainder of the exhibit was composed of vases of a variety of sorts, such as Coral Glow, Saffron, Michael Stoop, Shot Silk, and Mikado.

Messrs. **Stuart Low and Co.**, exhibited choice blooms of a number of the finest Perpetual-flowering Carnations in cultivation, including Eileen Low, Lord Lambourne, Ruby Glow, Duchess of York, Spectrum and Topsy.

HARDY TREES AND SHRUBS.

The vivid autumn colour on the foliage of various trees and shrubs which had previously been an attractive feature at the autumn show was nearly absent on the present occasion. The chief foliage colour was provided by occasional plants of Berberis and ornamental Vines, with the berries of some few Cotoneasters and Crataegus.

As usual, Messrs. **Hillier and Sons** had a very interesting group of trees and shrubs. Various Conifers, recently introduced from China, attracted the attention of tree lovers. Amongst the Conifers they showed were good specimens of Abies nobilis glauca, bearing an immense erect cone, Picea Omorika, with a number of its small pendulous cones; Pinus sinensis Forrestii, a handsome tree which has tufts of leaves as long as those of Pinus Montezumae, but seems much hardier; Picea polita, bearing its characteristic curved and sharply-pointed leaves; and Larix tibetica, a vigorous and graceful Larch, bearing two erect, purple cones on the main stem. Their other trees and shrubs included fine examples of Sorbus Vilmorinii, bearing plenty of rosy-flushed fruits; Acer laevigatum, which has lanceolate, undulate leaves; Buddleia Fallowiana, which has very woolly leaves and sweetly-scented pale flowers, with orange-coloured centres.

A goodly collection of Clematis was arranged by Messrs. **G. Jackman and Sons.** This included Crimson King, Empress of India, large violet-purple flowers with a darker bar; Lady Northcliffe, lavender; Lady Betty Balfour, Marie Boissellot, the best white variety, and Lasurstern, rich dark blue. They also showed Michaelmas Daisies, Gladioli, Sunflowers and Heleniums. Messrs. **L. R. Russell, Ltd.**, had well-flowered Clematis, especially of the varieties Henryi, white; ascotensis, blue; Crimson King, Nelly Moser and the very free-flowering, rose-coloured Comtesse de Bouchaud. Mr. **R. C. Notcutt** had an interesting group, containing Potentilla Farreri, Diervilla Abel Carrière, Ceanothus Albert Pittett, C. Gloire de Versailles, Hypericum Moserianum, Cotoneasters and shrubby Veronicas in variety.

Compact Conifers, chiefly Cupressus and the garden genus Retinospora, Piceas and Cedruses, were associated by Messrs. **R. and G. Cuthbert** with batches of Lilium speciosum and some excellent Nerines. Messrs. **J. Cheal and Sons** contributed a graceful group containing Crataegus warleyensis, with plenty of small red berries, C. sub-mollis, bearing large, bright red fruits, Berberis seedlings, Tamarix odessana, Cotoneaster moupinensis, and a stocky specimen of Cupressus (Retinospora) pisifera leptoclada bearing a large number of glaucous strobiles.

In a small square group, Mr. **J. C. Allgrove** grouped showy branches of Rosa Moyesii, R. Fargesii and R. rugosa rubra bearing vividly-coloured hips. Sturdy Conifers, Cotoneaster bullata, C. applanata, various Berberis and Japanese Maples were grouped by Messrs. **Hollambys, Ltd.** The **Orpington Nurseries Co.** had a great group of Conifers of the type valued for the rock garden, with specimens of Nandina domestica and varieties of Hibiscus syriacus. Very shapely little bushes of their useful Cupressus Lawsoniana Fletcheri and the nana compacta variety were shown by Messrs. **Fletcher Bros.**, who also displayed Juniperus communis fastigiata and Cupressus pisifera filifera aurea.

Lomatia ferruginea, Rhus Cotinus atropurpureus, Sciadopitys verticillata, Cupressus Lawsoniana Stewartii, C. pisifera plumosa aurea and other Conifers were shown by Messrs **Arthur Charlton and Son.**

Particularly well-grown Hollies grouped by Messrs. **Waterer, Sons and Crisp,** included gold and silver-leaved varieties, Ilex Wilsonii, with shining leaves; I. cornuta, I. camelliaefolia, I. Perneyi, I. Fargesii and I. crenata aurea. They also had examples of Hypericum Moserianum, Berberis and Ericas in variety, and Euonymus yedoensis, bearing large, rosy-coloured fruits.

Although out-of-flower, the Rhododendrons shown by Mr. **G. Reuthe** were handsome foliage plants. The chief sorts were Rhododendron Elizabethae, R. Elsae, R. auriculatum, R. Hodgsonii and R. fulvidum. He also showed flowering sprays of Magnolia Goliath, M. grandiflora ferruginea, Guevina Avellana, bearing flowers and relatively large, new fruits; Hoheria populnea, a handsome, white-flowered shrub, Escallonia montevidensis and Cassia corymbosa amongst his shrubs. The herbaceous plants included Hedychium Gardnerianum, many Michaelmas Daisies and Heleniums with Lilium tigrinum.

Topiary specimens in Box and Yew were shown by Mr. **John Klinkert,** while Messrs. **Harrods, Ltd.**, and Messrs. **Robert Green, Ltd.**, had collections of Bay Trees. Mr. **G. G. Whitelegg** had a very good selection of well-grown Conifers, mostly of the type suitable for planting in the rock garden.

HARDY BORDER FLOWERS.

Michaelmas Daisies were the most numerous of the hardy border flowers at the show and many varieties were displayed in great profusion. Again, this year, the outstanding variety was Barr's Pink, a Novae-Angliae variety which bears large, round, bright pink flowers of great charm. A large quantity was arranged by Messrs. **Barr and Sons** and it also appeared in nearly every collection of Michaelmas Daisies as well as in miscellaneous exhibits. Mr. **T. Bones** had a graceful collection of Michaelmas Daisies which included October Dawn, rosy mauve; Elsa, double mauve; Aldenham Pink, Margaret Ballard, double rose; and a good seedling rose-coloured flower, Maid of Athens. Mrs. J. S. Baker and other varieties were staged by Messrs **Bowell and Skarratt,** who also had sprays of early-flowering Chrysanthemums. In addition to trusses of Zonal Pelagoniums Mr. **R. J. Case** showed Michaelmas Daisies, and Chrysanthemums Red Riding Hood and Shirley Terra Cotta.

An imposing collection of Michaelmas Daisies was set up by Mr. **Wm. Sydenham** who had large vases of Grey Lady, King George V, Comtesse, Little Boy Blue, Barr's Pink and other good sorts. Messrs. **George Bunyard and Co.** had a very graceful exhibit and amongst other Michaelmas Daisies showed Mons, Charm, Nancy Ballard, General Pershing, Golden Spray and Fricarte. Snowdrift, October Dawn, Perry's Favourite and Grey Lady were amongst the Michaelmas Daisies Messrs. **Wm. Cutbush and Son** associated with Pentstemons and Dahlias.

A tastefully arranged collection of Michaelmas Daisies from the Maytham Gardens included good vases of Ethel Ballard, Walkden's Pink, Miss Eisle, Cloudy Blue and Namur. Mr. **W. Wells**, junr., set up a large collection in which Barr's Pink, Ethel, Mother of Pearl, Comtesse and King George V were prominent. They also showed large vases of Rudbeckia purpurea, R. Newmanii and various herbaceous Phloxes. Msesrs. **W. H. Simpson and Sons** exhibited an attractive selection of Michaelmas Daisies behind a large number of vases of Antirrhinums in very good named varieties.

Excellent secondary spikes of Delphiniums were staged by Messrs. **Hewitts, Ltd.** Their varieties included Dusky Monarch, Joy Bells, Norah Ferguson, La Vanda, Violet Queen and Wembley. Messrs. **M. Prichard and Sons** showed Kniphofias Royal Standard and Mt. Etna, Heleniums, Monarda Cambridge Scarlet, Hemerocallis aurantiaca major and other border flowers. Billardiera longiflora in fruit and a batch of double-flowered Iceland Poppies were prominent in an exhibit from Messrs. **W. H. Rogers and Son** who also showed Zauchneria californica. A well arranged floor group of Heleniums, Delphiniums and Michaelmas Daisies was exhibited by Mr. T. Carlile. Messrs. G. Gibson and Co. associated very good Gaillardias. Lilium tigrinum Fortunei, herbaceous Phlox, Kniphofias and Pyrethrums with other seasonable border flowers.

A large quantity of Kniphofia Mt. Etna, shown by Messrs. W. Artindale and Son, provided brilliant colour and they also set up vases of Michaelmas Daisies, Lobelias and Marigolds. Messrs. Isaac House and Son included lovely vases of Miss Hughes, Clive Greaves, Constance and Mrs. J. C. House in their large collection of Scabiosa caucasica varieties. Heleniums and Physalis Bunyardii, a large-fruited variety of rich colour, were shown by Messrs. George Bunyard and Co.

An especially good collection of herbaceous Phlox was shown in large stands by Messrs. E. T. Fairbairn and Sons. Their chief varieties were Triumph, bright purple; Eden, rosy salmon; Sir Douglas Haig, rich salmon, Vivid and Border Gem, blue-purple. The Chalk Hills Nursery Co. had a large exhibit of Michaelmas Daisies, Helianthemums, Scabious, Chelone glabra alba, Clematis Columbine and other hardy flowers. In addition to a good collection of herbaceous Phlox, Messrs. John Forbes, Ltd., exhibited an exceedingly good collection of named Pentstemons. The varieties included Countess Granard, Colonel Joicey, Crown Princess of Sweden, Lord Northcliffe, King George V, Day Dream and Castle Forbes.

A good collection of tall Lobelias amongst which B. Ladhams, vivid crimson; Mrs. Humbert, soft pink, and Princess, deep rose were conspicuous, was shown by Messrs. B. Ladhams, Ltd., who also had vases of Erigerons, Coreopsis auriculata superba and Dahlia Attraction. Good spikes of Delphiniums Robert Cox, Lavanda, George Cochrane and Lamartine were shown with herbaceous Phloxes by Messrs. Blackmore and Langdon.

Messrs. Bakers, Ltd., had a floor group of herbaceous Phlox, Michaelmas Daisy King George V., Gladioli, Kniphofia Royal Standard, Delphinums and other seasonable flowers.

A rock garden with a small pool was made by Messrs. Maxwell and Beale and planted with dwarf Conifers, Ericas, Colchicums and other subjects. At the end of the rock garden they had a collection of Heaths and Heathers with a few Barberries. The Central Garden Supplies planted a small rock garden with Chrysogonum virginianum, Satureia pygmaea, Sedum spathulifolium and other interesting plants.

Mr. Clarence Elliott planted a large drift of Gentiana sino-ornatus in a pleasantly designed rock garden where he also had small Conifers, and the dwarf Papaver alpinum. Mr. W. E. Ingwerson also had Gentiana sino-ornatus in a rock garden with rugged old Conifers. Mr. Gavin Jones and the Misses Hopkins had various alpines, while Mr. Ernest Dixon made a miniature formal garden. In addition to his large collection of Chrysanthemums Mr. Wm. Yandell had many flowers of Violas in wet sand. The chief varieties were Queen of the Whites, Royal Scot, blue, Primrose Dame, Maggie Mott and Mrs. A. Stevenson.

Mr. James Macdonald charmed many visitors with his "grass garden." In addition to smooth level grass of refreshing greenness and free from even the smallest weeds, he used with great success many ornamental grasses.

The glowing colours of many of the Zinnias exhibited by Messrs. Sutton and Sons in a large, circular group attracted a deal of attention. Many varieties were used; these were of an excellent strain and in colour names, such as Delicate Rose, Double Orange, Double Scarlet and Double Yellow. There was also a selection of dwarf hybrid Zinnias which bear flowers a little more than an inch across, and of many beautiful colours.

In association with a group of the hardy Ferns he grows so well, Mr. Amos Perry exhibited excellent plants of Lilium longiflorum giganteum, L. regale, L. nepalense, Watsonia Ardernei, W. rosea, Montbretias, some hardy Crinums and various herbaceous plants. Messrs. Wallace and Co. had stately spikes of Lilium auratum, L. tigrinum and its double variety, and L. longiflorum with Japanese Acers, shapely Cupressus and other Conifers.

Mr. F. G. Wood planted Primula Mooreana, Gentiana sino-ornatus, Silene Schaftae Campanula Mayi, Fuchsia pumila and other suitable plants in a well-conceived rock garden. Messrs. Rich and Co. showed Iceland Poppies, Michaelmas Daisies, herbaceous Phlox and Gladiolus. Amongst the Michaelmas Daisies grouped by Mr. Ernest Ballard were the varieties Royal Blue, Gay Lady and Maggie Perry. Messrs. Waterer, Sons and Crisp associated Michaelmas Daisies with Lilium auratum, the giant-flowered Helianthus sparsifolius and other border flowers. In the gallery Mr. G. G. Whitelegg had an unnamed collection of Heleniums and Michaelmas Daisies. Messrs. Reamsbottom and Co. showed a selection of good flowers of their strain of St. Brigid Anemones.

Sweet Violets were shown by Mr. J. J. Kettle and Mr. B. Pinney who also included a few vases of Roses.

A large collection of Sweet Peas was set up by Messrs. Dobbie and Co., which, even so late in the season were of very good quality. Amongst the many varieties we especially noted Charming, Mrs. T. Jones, Mary Pickford, George Shawyer, Mermaid, Youth, Ruby, Mrs. Arnold Hitchcock, Tangerine and King Mauve.

Fruit and Vegetable Committee.

Present: Mr. A. H. Pearson (in the Chair). Mr. J. Cheal, Mr. P. C. M. Veitch, Mr. Geo. F. Tinley, Mr. E. Beckett, Mr. J. C. Allgrove, Mr. H. Prince, Mr. G. Woodward, Mr. A. Metcalfe, Mr. A. N. Rawes, Mr. J. Wilson, Mr. E. Neal, and Mr. W. H. Divers.

A seedling Grape shown by Mr. Chas. Turner, Slough, was raised by a friend of his from a Raisin stone. The seed was sown in November, 1923, and the vine produced forty bunches this year. The Grapes were green and in shape like those of Cornischon Blanc.

Groups.

Messrs. Daniel Bros., Norwich, exhibited fruits including Apples, Pears, Plums and Grapes, decorated with fruiting sprays of Berberis and Cotoneaster frigida. The bunches of Muscat of Alexandria Grapes were of large size. Plums Coe's Golden Drop and President were excellent and there were fine Doyenné Boussoch and Pitmaston Duchess Pears.

The Barnham Nurseries had a large exhibit of Apples and other hardy fruits, the quality being unequalled in the show. The use of small Conifers in pots and Eulalia japonica variegata at the back was in good taste and not overdone. Very excellent fruits of Apples, Lord Derby, Grenadier, Baron Wolseley, Newton Wonder, Ben's Red, Bramley's Seedling, Peasgood's Nonesuch, Chas. Ross, Rival, Ribston Pippin, Lady Sudeley, Worcester Pearmain, and Ellison's Orange, in a season when Apples generally are of poor quality and scarce, were specially noteworthy. Pears, too, were good, and there were excellent Plums and fruiting sprays of Lloyd George Raspberry.

Messrs. Stuart Low and Co., Bush Hill Park, Enfield, put up a very attractive exhibit of fruits in which Fig trees in pots and sprays of berried shrubs were used as foils. Large, well-coloured fruits of Apples Peasgood's Nonesuch, Lane's Prince Albert, Chas. Ross, Tyler's Kernel, Wealthy and others were the principal subjects.

Messrs. G. Bunyard and Co., Ltd., Maidstone, displayed a representative exhibition of hardy fruits, including Apples, Pears, Plums, Damsons, Grapes, and Nuts. The quality was excellent and the grouping admirable. The finest Apples were Christmas Pearmain, St. Edmund's Russet, Lord Derby, Lord Hindlip, Rival, Wealthy, Stirling Castle, Chas. Ross, Allington Pippin and Cutler Grieve. Of Pears there were excellent fruits of Beurré Superfin, Beurré van Geert, Doyenné du Comice, Conference, Beurré Hardy and Williams's Bon Chretien. Late Orange, Coe's Golden Drop, Primate, Archduke, and Pond's Seedling were the pick of the Plums and Langley Bullace, Bradley's King and Farleigh represented some of the finest Damsons in cultivation.

Mr. J. J. Kettle, Wimborne, showed Raspberry Lloyd George, and seedlings from this excellent variety. The best of the latter was Corfe Mullen Wonder, which, if cut down in the spring, will give an abundant crop at this date.

Awards by the Council.

Cups.

The Wigan Cup, offered for the best exhibit of Roses was awarded to Messrs. S. McGredy and Son, Portadown.

Silver Cups.—To Messrs. Hillier ane Sons, for trees and shrubs; to Mr. J. W. Forsyth, for Chrysanthemums; to Mr. H. J. Jones, for Michaelmas Daisies and Helianthus; to A. P. Brandt, Esq. (gr. Mr. W. J. Barks), Bletchingley, Surrey, for stove and greenhouse foliage plants; to Messrs. L. R. Russell, Ltd., for Tree Ferns and foliage plants; to Messrs. Dickson and Robinson, for Dahlias: to Messrs. Jarman and Co., for Dahlias; to Mr. H. J. Jones, for Dahlias: to Messrs. Allwood Bros., for Carnations; and Messrs. C. Engelmann, Ltd., for Carnations.

Medals.

Gold Medals.—To Messrs. G. Bunyard and Co., for hardy fruits; to Messrs. Dobbie and Co., for Dahlias: to Messrs. S. McGredy and Son, for Roses.

Silver-gilt Flora Medals.—To Messrs. J. Cheal and Sons, for shrubs; to Mr. G. Reuthe, for shrubs; to Messrs. Waterer, Sons and Crisp, for Hollies and Conifers; to Messrs. K. Luxford and Co., for Chrysanthemums; to Mr. W. Sydenham, for Michaelmas Daisies; to Messrs. Cowan and Co., for Orchids; to Messrs. Black and Flory, for Orchids; to Messrs. Stuart Low and Co., for greenhouse plants; to Messrs. Blackmore and Langdon, for Begonias: to Messrs. M. Prichard and Sons, for hardy plants: to Messrs. R. Wallace and Co., for shrubs and hardy flowers; to Messrs. J. Carter and Co., for Lilies and Gladioli; to Mr. Amos Perry, for hardy Ferns and Lilies; to Messrs. G. Jackman and Son, for hardy flowers and Clematis; to Mr. C. Elliott, for a rock garden; to Mr. Gavin Jones, for alpine plants and dwarf shrubs; to Messrs. Maxwell and Beale, for alpine plants and Conifers; to Mr. J. B. Riding, for Dahlias; to Messrs. J. Stredwick and Son, for Dahlias; to Mr. J. T. West, for Dahlias; to Messrs. H. Woolman and Son, for Dahlias: and to Mr. T. Robinson, for Lilies.

Silver-gilt Hogg Medal.—To the Barnham Nurseries, Ltd., for Apples and Pears.

Silver-gilt Banksian Medals.—To Messrs. A. Charlton and Sons, for trees and shrubs; to Hollamby's Nurseries, for trees and shrubs: to Mr. R. C. Notcutt, for shrubs; to Messrs. Austin and McAslan, for Gladioli; to Mr. E. Ballard, for Michaelmas Daisies: to Messrs. Barr and Sons, for Micheelmas Daisies; to Mr. W. Yandell, for Chrysanthemums and Violas; to Mr. Amos Perry, for hardy flowers: to Messrs. L. R. Russell, Ltd., for Clematis; to Mr. W. T. Ingwerson, for alpine plants and Conifers; to Messrs. J. Peed and Son, for greenhouse plants: to Messrs. Blackmore and Langdon, for Phloxes and Delphiniums; to Messrs. Hewitt and Co., for Delphiniums: to Messrs. E. F. Fairbairn, for Phloxes; to Messrs. Stuart Low and Co., for Orchids; to Messrs. J. Forbes, Ltd., for Phloxes, Pentstemons and Dahlias: to Mr. James McDonald, for a grass garden; to Messrs. Carter Page and Co., for Dahlias: to Messrs. Alex. Dickson and Sons, for Roses: to Mr. J. Mattock, for Roses: to Mr. Geo. Prince, for Roses.

Silver Flora Medals.—To Messrs. Fletcher Bros., for Conifers and berried shrubs: to the Orpington Nurseries Co., for shrubs; to Messrs. Maxwell and Beale, for hardy Heathers and shrubs; to Mr. A. Edwards, for Gladioli; to Mr. T. Bones, for Michaelmas Daisies; to Mr. W. Wells, Junr., for herbaceous plants; to Mr. F. G. Wood, for rock garden plants and dwarf shrubs: to Messrs. Isaac House and Son, for Scabious and Kniphofias; to Messrs. W. Treseder, Ltd., for Dahlias; to Messrs. B. R. Cant and Sons, Ltd., for Roses; to Mr. J. H. Pemberton, for Roses.

Silver Banksian Medals.—To Mr. T. J. Klinkert, for topiary; to Messrs. R. H. Bath, Ltd., for Gladioli; to Messrs. Lowe and Gibson, for Gladioli and Delphiniums; to Messrs. S. Low and Co., for Carnations; to Messrs. W. Artindale and Son, for herbaceous plants; to Messrs. R. and G. Cuthbert, for Conifers, Lilies and Nerines; to Mr. R. J. Case, for Pelargoniums and herbaceous plants; to Messrs. B. Ladhams, Ltd., for Lobelias and hardy plants; to Messrs. Chaplin Bros., for Roses; to Mr. E. J. Hicks, for Roses.

Flora Medals.—To Messrs. Harrods, Ltd., for Bay, Box and Yew trees; to the Maytham Gardens, for Michaelmas Daisies; to Mr. S. Smith, for Cacti and succulent plants; to Messrs. Bakers, Ltd., for herbaceous plants; to Messrs. G. Bunyard and Co., for herbaceous plants and Dahlias; to Messrs. J. Waterer, Sons and Crisp, for herbaceous plants; to Messrs. W. H. Simpson and Sons, for Antirrhinums, Michaelmas Daisies, etc.

Banksian Medals.—To Mr. J. C. Allgrove, for berried shrubs; to Messrs. R. Green, Ltd., for Bay trees; to the Orpington Nurseries Co., for Gladioli and Delphiniums; to Messrs. Daniels Bros., for Montbretias, Gladioli, etc.; to Messrs. G. Bunyard and Co., Ltd., for Michaelmas Daisies; to Messrs. Bowell and Skarratt, for herbaceous plants; to Messrs. Sutton and Sons, for Zinnias; to Mr. H. Hemsley for shrubs, Dahlias and herbaceous plants; to Messrs. G. Gibson and Co., for herbaceous plants; to the Central Garden Supplies, for rock garden plants; to Messrs. W. H. Rogers and Sons, for herbaceous and rock garden plants; to Mr. C. Turner, for Dahlias; to Messrs. D. Prior and Son, Ltd., for Roses; to Messrs. A. Warner and Son, for Roses.

Bronze Hogg Medal.—To Messrs. Daniels Bros., for fruit.

CARDIFF AND COUNTY HORTICULTURAL.

The thirty-second annual flower show of this Society was held at the Drill Hall, Dumfries Place, on Wednesday and Thursday, September 1 and 2, under the presidency of the Rt. Hon. the Earl of Plymouth. The entries numbered 1,180, about 200 more then the previous year. The greatest attraction of the show was the magnificent first prize exhibit of Dahlias shown by Messrs. Wm. Treseder, Cardiff; Messrs. H. Woolman and Sons, Shirley, who were awarded the second prize, had also some very fine blooms.

A beautiful non competitive water garden arranged by Mr. J. Smith, gardener to Reginald Cory, Esq., Duffryn, Cardiff, was a feature of the show.

The new Rose, Charming Princess, was well shown by Mr. T. Hancock, Mansfield, Notts. This is a glorious vermilion, shaded gold, sport from Queen Alexandra, and was greatly admired.

Another notable trade exhibit was shown by Messrs. S. Treseder, Cardiff, including floral decorations, fruits and Roses.

Excellent fruit trees in pots were shown by the King's Acre Nurseries, Hereford.

Choice Apples and other fruits were shown in competitive classes by Mr. W. H. Brain, of Cwest-yr-Ala, his first prize collection of culinary Apples included grand samples of Alfriston; and he was first also for dessert Apples. Premier honours were also secured by the same exhibitor for a collection of dessert fruits, dessert Pears, one dish of culinary Apples, and one dish of dessert Apples.

The first prize for a collection of Roses was won by Messrs. Wm. Treseder, who had splendid pillars and baskets of the best varieties.

In the amateurs' section for Roses, Mr. J. Allan Gibbs was successful for the best bowl and vase of cut blooms. A fine display of Sweet Peas was arranged by Mr. J. May, of Ywysbwl, who secured the Challenge Cup valued at twenty five guineas, given by Dan Radcliffe, Esq. Mr. W. J. Hale excelled in the amateur's class for six vases of Sweet Peas.

Mr. C. Engelmann, Saffron Walden, was the only exhibitor of Carnations in the open class.

A good display of hardy plants was arranged by Messrs. Wm. Treseder, who again won the highest honours in the open class, whilst the leading exhibitor of hardy flowers in the amateurs' section was Mr. J. Allen Gibbs, Lissane. The first prize for cut flowers was won by Mr. D. A. Burns, of Cardiff.

A beautiful vase of Liliums secured first prize for Capt. A. M. T. Fletcher, Margam Castle, and Mr. D. A. Burns was placed first for three vases of Gladioli.

A Challenge Cup presented by Messrs. Wm. Treseder for the best Dahlias, Roses and hardy flowers was won by Mr. G. H. Temy, Whitchurch.

The vegetable classes were all well filled, and some excellent collections and specimens were staged. For a collection of nine kinds, distinct, the first prize was awarded to Mr. F. Jenkins, Aberdare, and for the best collection of six kinds, Mr. W. Evans, Barry, was the winner. Mr. T. Harding, Perthcawl, was first for three dishes of Potatos. In the single dish classes of various vegetables, Messrs. F. Morgan, A. J. Lusty, T. Hale, G. Martin, W. H. Andrews, L. W. Pyman, M. Huzzey and Mrs. Morgan Lewis were the chief first prize winners.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT.

At the monthly meeting of this Society, held in the R.H.S. Hall, on Monday, September 13, Mr. Charles H. Curtis presided and nine new members were elected. Two members over the age of seventy years withdrew £115 1s 1d. from their Deposit Accounts, and the sum of £178 1s. 9d. was passed for payment to the nominees of two deceased members. The Sick-pay for the month on the Ordinary side came to £56 1s. 8d. and on the State Section to £88 14s. 0d.; Maternity benefits totalled £4 10s. 0d. The sum of £26 18s. 6d. was granted to eleven members for dental and optical treatment; and twelve applications for special benefits were considered.

LANCASTER SHOWS.

The horticultural section of the Lancaster Agricultural Show—the oldest horticultural show in the county town—had to report a decrease in entries from 480 to 380, and although this may be the result of its suspension last year, it was not encouraging.

Dahlias were especially good, and those from Mr. F. Smith won first prize, with Mrs. Mrs. Musgrave Hoyle a good second. Vegetables were good, while herbaceous and annual flowers made a brave show, and in the tradesmen's exhibits Messrs. Harkness, of Bedale, and Mr. S. T. Downham, of Galgate, provided fine stands. The table decorations by Mr. E. M. O'Hara and Mrs. Musgrave Hoyle were pretty and effective. The Park Committee (gr. Mr. J. Dearden), made a fine non-competitive exhibit; and in a similar stand, Mr. H. C. W. Foster, Hornby Castle, had a fine display. The principal prize-winners for cut flowers were Mr. T. A. Claydon, Mr. T. N. Cross, Mr. N. Bell, Mr. S. T. Downham and Mr. T. Huntingdon; for fruit, Dr. E. S. Jackson, Mr. W. Robinson, Mr. F. Waghorn and Mr. T. Huntingdon; and for vegetables, Mr. W. Robinson, Mr. S. T. Downham, Mr. R. Newton, Mr. T. Huntington, Mr. B. S. Park, Mr. F. Emmott, and Mr. R. H. Middlefell.

At Shireshead show the entries were about the average, but on the morning of the show day there was very heavy rain. This show is one of the prettiest in the north. Mr. W. Robinson, the well-known exhibitor at Shrewsbury and Southport, is Secretary, and as the district is a market gardening one, first-class exhibits are numerous. An outstanding feature was an exhibit of Onions by Mr. Robinson, for which he has not been beaten this year, even at the Royal Lancashire, Shrewsbury and Southport shows. The cottagers' classes were well filled, and in the open classes competition was very keen. Fruit, as befits a fruit-growing district, was particularly fine. The principal prize winners were Mr. W. Robinson, Mr. T. Huntington, Mr. J. R. Meadows, Mr. J. Exton, Mr. Blundell, Messrs. Stuart and Sons, Mr. T. N. Cross, Mr. T. E. Huntington and Mr. J. Downham.

At the Scotforth show, on September 4, there was by far the best of local shows, and although Scotforth is only a suburb of Lancaster, and a market-gardening one, it has been usual to expect something above the average, and visitors were not disappointed on this occasion. Some of the flower classes were worthy of more pretentious shows, Gladioli, Roses and Asters being exceedingly good. Vegetables included exhibits from the leading prize-winners at Southport, and were so numerous as to be somewhat crowded. All entries were increased and of first-class merit. Dahlias were gorgeous, and Mr. H. Lund secured first prize rather narrowly from Mr. T. Huntington. Paeony-flowered Dahlias, shown by Mrs. Musgrave Hoyle, were a revelation. Annuals were a large class, Mr. T. Huntington only just securing the chief award from Mr. T. N. Cross, but the latter was the winner for Sweet Peas. Antirrhinums made a good show. In the Rose classes rivalry was keen, the respective winners in various classes being Mr. T. Huntington, Mr. S. T. Downham and Mr. J. Harris. Mr. Downham led for herbaceous Phloxes, summer Chrysanthemums and herbaceous flowers, followed by Mr. W. Smith, Mr. T. E. Huntington and Mr. N. Carr. Gladioli were magnificent, and here Mr. T. Huntington was successful by several points from Mr. P. W. Smith and Mr. H. Danson.

Mrs. Musgrave Hoyle's epergne was a beautiful and tasteful composition of Carnations and Verbenas.

Fruits of all sorts were extraordinerily good, and Messrs. H. H. Mackereth, W. Robinson, J. Kelsall were the chief prize-winners in this section.

MORECAMBE HORTICULTURAL.

On Wednesday, August 18, the eighth annual show of the Morecambe Horticultural Society was held in the Parks, Bane, and was favoured with fine weather. There were about 600 exhibits, and the exhibits were good, considering the recent inclement weather. Three Cups were offered, the Overend Cup for the best vegetables: The Ceres Ridge Cup for a collection of cut flowers; and the A. V. Hammond Cup (given by the President) for the most points gained by an amateur. In the open class, Mr. T. N. Cross won the first prize for Sweet Peas; Mr. G. Pennell, for herbaceous flowers; Mr. F. Smith, for annuals and perennials; Messrs. Ratcliffe and Tomlinson, for Cactus Dahlias; Mrs. Musgrave Hoyle, for any other variety of Dahlia; and Messrs. Ratcliffe and Tomlinson, for Gladioli. Fruit was good and vegetables extra good, particularly the collection shown by Mr. W. Robinson, of Forton, whose Onions were of extraordinary size.

NATIONAL CHRYSANTHEMUM.

The Floral Committee of this Society met in the Music Gallery, at Holland Park Hall, on Monday, September 20, when the following awards were made.—

First Class Certificates.

Madeline.—II, 1, b. A very pleasing canary-yellow variety, the blooms borne on wiry stems. Apparently very free-flowering.

Janet Wyber.—II, 1, b. This is an elegant primrose-coloured sport from Miss G. K. Thorpe and identical in form and habit with that useful variety.

Peerless.—V, 2, b. A single variety that promises to be a very useful garden sort. The flowers are golden-yellow, with deeper coloured disc. Fine in spray form. These three varieties were shown by Mr. A. W. Thorpe, Lichfield.

Richard Holding.—V, 2, a. A large, early-flowering single variety with several rows of ray florets. The stems are wiry and hold the blooms erectly; colour chestnut-crimson with a golden zone around the golden disc Shown by Messrs. H. Woolman and Son, Shirley, Birmingham.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

At the meeting held at Southport in conjunction with the Southport Flower Show, the members of Committee present were J. B. Adamson, Esq. (in the chair), Messrs. A. Burns, B. Collins, A. Coningsby, J. Evans, A. Keeling, J. McCartney, D. McLeod, J. Thrower and H. Arthur (Secretary).

First Class Certificates.

Cattleya Profusion var. The King.—A well-shaped flower, the large lip having a deep crimson base; *C. suavior var. compacta.*—A variety with a white ground, the sepals and petals and lip being tipped with deep crimson; *Laelio-Cattleya Thebes var. Mary Regina.*—An orange-brown flower with a ruby lip; *L.-C. Hassallii alba var. Evansiae.*—The sepals and petals of this variety are pure white, the large lip having a rich crimson base and yellow throat; *Odontoglossum Whiterock* (*Olympus* × *President Poincaire*).—A large flower with dull Port-wine markings; the lip is flat, the base being tipped with white; *Cypripedium T. Abbot, Adamson's variety.*—This variety is chocolate-red in colour; the dorsal sepal is the same shade with ruby lines. All the foregoing were shown by J. B. Adamson, Esq., Blackpool.

Cattleya suavior var. excelsa.—A large flowers with a white ground and sepals, petals and lip heavily-tipped with deep crimson; *Laelio-Cattleya St. Gothard var. Lord Renfrew.*—An evenly coloured variety; the large lip is tipped with velvety crimson. Shown by Messrs. Stuart Low and Co.

Laelio-Cattleya Profusion var Suttoniae.—A large flower of good substance and shape; the broad lip is deep crimson; *L.-C. Vega var. Gisie.*—The lip of this variety is light crimson with yellow lines in the throat. Shown by Messrs. Sutton Bros.

Cattleya suavior var Aquine.—A white flower evenly tipped on the sepals, petals and lip with crimson. From G. V. Llewelyn, Esq.

Laelio-Cattleya Profusion, Vestey's variety.—A large flower of even colour; the well-shaped lip is coloured deep crimson. From the Hon. G. E. Vestey.

Awards of Merit.

Odontioda Pyrrhus var. Purple Queen: O. Norah: Cattleya Carmencita excelsis: Laelio-Cattleya Nancy: Sophro-Laelio-Cattleya de Vere Beauclerc: Brasso-Cattleya Muriel var. Queen Elizabeth: Laelio-Cattleya St. George, Towneley Grove variety.—From J. B. Adamson, Esq.

Miltonia Wm. Pitt: Sophro-Laelio-Cattleya Isabella: Laelio-Cattleya Marina.—From Messrs. Charlesworth and Co.

Odontoglossum Rosina and Laelio-Cattleya Warrior.—From Messrs. J. and A. McBean.

Cattleya Clive var. Prince of Wales.—From Mr. John Evans.

Cattleya Lorna.—From G. V. Llewelyn, Esq.

Odontioda Hiawatha.—From Messrs. A. J. Keeling and Sons.

Laelio-Cattleya Carmencita var. Mikado.—From Messrs. Sanders.

Brasso Cattleya Hannibal.—From Messrs. Sutton Bros.

Groups.

Gold Medals were awarded to the following exhibitors who staged excellent groups of Orchids: J. B. Adamson, Esq., Blackpool; the Hon. G. E. Vestey, Birkdale (gr. Mr. B. Collins); G. V. Llewelyn, Esq., Southport; Messrs. Charlesworth and Co., Haywards Heath; and Messrs. J. and A. McBean, Cooksbridge.

Groups were also staged by Mrs. Bruce and Miss Wrigley, Bury (gr. Mr. A. Burns); J. McCartney, Esq., Bolton (gr. Mr. C. F. Potts); Messrs. Keeling and Sons, Bradford; Messrs. Stuart Low and Co., Enfield, and Messrs. Sutton Bros, Hassocks, to whom Silver-gilt Medals were awarded, respectively.

Messrs. Sanders, St. Albans; R. A. Ashworth, Esq., Newchurch (gr. Mr. W. Hough), and Mr. John Evans, Colwyn Bay, were all awarded Silver Medals.

LONDON ALLOTMENTS AND GARDENS.

September 3 and 4.—The third annual show of the above Society, at the R.H.S. Hall, Westminster, surpassed its two predecessors in every respect. On the Friday, although a large attendance could scarcely have been expected, there was quite a good gathering of members and the general public, while the Saturday's attendance was very gratifying. As stated in the schedule, the aim of the Society is to encourage, in every way possible, not only the production of home-grown food, but also "the cultivation of flowers to brighten the homes of the workers, the keeping of bees for production of honey, to demonstrate the uses thereof, also the various by-products of same." At this annual show the Society goes even further, for in addition to the competitive classes for vegetables of all kinds, fruits, flowers, honey, cakes, home-made bread, jams and bottled fruits, there were side-shows of harmless amusements-cum-skill.

The Society interprets London rather liberally and the exhibits were grown so far afield as Windsor, Hampton, Watford, Southgate Chase and Brockley. There were said to be some 1,300 exhibits, which is a twenty-five per cent. increase on last year's figures, so that, in point of numbers alone, the executive have reason for congratulation. But in addition to the increase in the number, there was also an improvement in the general quality of the exhibits, which was excellent.

The eight collections of twelve distinct kinds of vegetables, grown by members of one Society, on the allotments of the district, were all well worthy of prizes, and the first three, shown by the Southgate, Edmonton and Beckenham Societies, in the order named, were of especially high quality. The Cauliflowers, Tomatos, Peas and Runner Beans neared perfection. The Society Class for Potatos also reached a high standard of excellence. In the Windsor Park first prize exhibit of six varieties the tubers were equally as good as those shown at the R.H.S. annual Vegetable Show. The chief varieties were Royal Kidney, Tinwald Perfection, King Edward VII and Di Vernon. The Well Hall Society was a good second, followed closely by the Edmonton Society.

The best of the eleven exceedingly good collections of six kinds of vegetables was shown by Mr. J. R. Smith, Watford, who had splendid Celery, Leeks, Onions, Potatos, Carrots and Runner Beans. Mr. J. Peck, Ponders End, ran the winner very closely, and Mr. L. Neville was a good third.

The same high quality was continued in the many single dish classes, of which that for Vegetable Marrows alone could be criticised; here some were a trifle old, but their sizes and shapes were admirable. As befits an Allotment Society's show, Potatos were particularly important and of all-round high quality. There were nineteen exhibits of three distinct varieties, and very many more of single dishes of round and of kidney varieties. In each the tubers were true to type, perfect in form, clean-skinned and of good useful size. Mr. H. J. G. Pearman, Hampton, was first in the large class, while Mr. A. Gay, Abbey Wood, had the best kidneys, and Mr. W. E. Phillips, Palmers Green, was first with rounds. The Tomatos, Leeks, Peas, Onions, Carrots and Beet were all worthy of high praise.

There was only one exhibit of a collection of six vegetables grown in a school garden; it was from the Holme School, Leybourne, near Malling, Kent, and consisted of excellent vegetables, well-displayed. It is interesting to record that this school won the first and second prizes as having the two best school allotments in the Home Counties. Fruit was not largely shown, though the Apples and Pears exhibited were very good.

Flowers were shown extensively and had been grown equally as well as the vegetables. The chief flowers were Roses, Gladioli, Salpiglossis, Asters, Sweet Peas, Dahlias and Chrysanthemums. Competition was also very good in the class for a table decoration, in which all the exhibitors arranged their flowers with commendable taste and skill.

ROYAL CALEDONIAN HORTICULTURAL.

The monthly meeting of this Society was held at 5, St. Andrew Square, Edinburgh, on September 8, Mr. W. J. Thomson, president, in the chair.

Dr. W. G. Smith of the Edinburgh and East of Scotland College of Agriculture read a paper on "Grasses in relation to Horticulture," in which he discussed the properties of the Grasses which entered into the composition of lawns; he divided them into two groups—those which form the permanent turf and those which are merely useful in the early years after sowing. The difficulties of seed production were alluded to, and he considered the best strains of Grasses for special purposes could be obtained by investigations such as those now being carried out at the Plant-Breeding Station at East Craigs, near Edinburgh.

Mr. J. W. Scarlett, Sweethorpe, Inveresk, had an exhibit of Apples, for which he was awarded a Cultural Certificates. He recommended the more general cultivation of Early Victoria, James Grieve and Bailie Neilson from the marketing point of view. The other exhibits were out-door-grown Tomatos, from Messrs. Wilson and Co., Edinburgh; Hydrangea, from Miss Barty, Edinburgh, and Carrots, from Mr. Houston, Edinburgh.

Obituary.

Leon Diguet.—We regret to record the recent death, in Paris, of M. Léon Diguet, the well-known French naturalist and explorer, at the age of sixty-seven years. His explorations, chiefly in lower California and Mexico, were mainly concerned with Cacti, of which he sent home to the National History Museum many interesting collections. He was a Chevalier of the Legion of Honor.

H. G. Oclee.—The death took place very suddenly on the afternoon of Saturday, September 18, of Mr. Herbert George Oclee, who had been at Blickling Hall Gardens, Norfolk, for the past fifty-four years. Those who have visited Blickling will recall the charming Terrace Gardens leading from the Hall front, the maintenance of which was the special pride of Mr. Oclee. Although latterly he had not exhibited, some years ago he gave evidences of his skill as a grower of fruit, especially by the prizes he obtained. As a judge at exhibitions his services were in great request. His geniality and cheery smile will be sadly missed by his numerous horticultural friends

TRADE NOTES.

Messrs. R. Wallace and Co. write: "Whilst allowing full credit to the famous Langport firm for all their work in connection with Gladiolus, covering such a long period of years, we think it only fair to state that on September 1, 1908, we placed before the Royal Horticultural Society hybrids of Gladiolus primulinus, the result of crosses made between Gladiolus primulinus and various forms of G. Gandavensis. This strain then received an Award of Merit and was subsequently offered by us in our catalogue of 1909 and onwards. We therefore fail to see why Messrs. Kelway claim to be the original distributors of these hybrids. We would add that our corms were obtained from the late Dr. van Fleet, of U.S.A., a very keen hybridizer and introducer of new plants. We continued to sell the hybrids of this strain for many years. The hybrids in those early days possessed many of the colours we now see, but, of course, the strain, after so many years, has been vastly improved, which is only to be expected. We therefore claim that in 1908 Gladiolus primulinus hybrids had already been raised, certificated, and were being distributed some four years before Messrs. Kelway and Son put theirs on the market. Doubtless Dr. van Fleet distributed corms to some American nurserymen, and the statement in *The Times* of 1922, as to American nurserymen being responsible for their introduction, is, in a great measure, correct. We ourselves think that the name Primulinus hybrids, which is now so well-known, is a much more pleasing one than Langprim."

WITH reference to Messrs. Kelway's letter on page 219, may I draw attention to an article or paper which appeared in your columns sometime in 1914 and signed "S. Mottet, Verrieres le Buisson, France." in which the writer states: "Large displays of the hybrid G. primulinus were made by Messrs. Vilmorin-Andrieux et Cie., at the Ghent International Exhibition in 1913, and at the show of the Gladiolus Society at the Drill Hall in July last (1914) where they won the first prize. . . .

It has not been thought worth while up to the present to have named varieties, as in other strains." This article was reproduced in the *Modern Gladiolus Grower* of September, 1916, with the following note: "This is evidently a paper read before a French Society some time ago and only recently translated into English. Messrs. Kelway have listed several under names, but they style them 'Langprim hybrids.' Their Manual of Horticulture for 1913 contained the names of six; the most popular, perhaps, being Banshee." *Observer.*

OWING to the expansion of their landscape and rock garden department, Messrs. Wm. Wood and Son, Ltd., are developing a nursery adjacent to their present premises at Taplow, and they have been fortunate enough to secure the services of Mr. A. Lynes, late of Messrs. Waterer, Sons and Crisp, as their nursery manager.

ANSWERS TO CORRESPONDENTS.

ASH FROM WOOD AND PAPER.—*J. O.* The ash from wood and paper is quite suitable for use in the garden as it contains a fairly high potash value and should be used in very much the same way as ordinary wood ash. The procedure you suggest should prove a useful one.

PEACH WITHOUT FLAVOUR.—*F. F. B.* It was impossible to name the Peach or taste the fruits, as the box and its contents were smashed. The variety might be Crimson Galande or Peregrine and should have been of good flavour. Expose the fruits after stoning to full sun, and give the border two or three dressings of sulphate of potash during the growing season at the rate of two ounces to the square yard, and also a dressing of slacked lime in the early spring.

STRAWBERRY LEAVES FOR EXAMINATION.—*H. S.* Your Strawberry leaves are affected with spot disease, Mycrosphaerella Fragariae. Although causing disfiguration of the foliage, this fungous disease is not generally supposed to seriously injure the fruiting of the plants, consequently remedial measures are not usually adopted. It has been suggested that the removal of the leaves late in the season and spraying the new foliage with Bordeaux mixture, before flowering, will check the trouble.

VINE DISEASED.—*G. M. J.* The disease attacking your vine is caused by a fungus, probably Botrytis cinerea. All diseased portions should be cut away and burned, and after the bunches have been cut, spray the vine with a two per cent. solution of calcium bisulphite. Botrytis is a sign that the ventilation has been insufficient and the air too damp. You should aim at maintaining a relatively dry, well-circulated atmosphere in future.

Communications Received.—H. J. W.—P. S.—T. H. E.—G. D.—H. W.—Miss E. G. H.—J. M.—W. G. T.—G. F. M.—A. S. S.—E. S.—T. A. W., New York—K. D.—W. L.—G. R. C.—A. K.—E. A. S.—D. D. R.—G. B.—H. C.—T. S.—J. P.

MARKETS.

COVENT GARDEN, Tuesday, September 21st, 1926.

Plants in Pots, etc.; Average Wholesale Prices.

(All 48's except where otherwise stated).

	s. d. s. d.
Adiantum cuneatum per doz. ...	10 0-12 0
—elegans ...	12 0-15 0
Aralia Sieboldii	9 0-10 0
Araucarias, per doz.... ...	30 0 42 0
Asparagus plumosus ...	12 0-18 0
—Sprengeri ...	12 0-18 0
Aspidistra, green	36 0-60 0
Asplenium, doz.	12 0-18 0
—32's	24 0-30 0
—nidus ...	12 0-15 0
Cacti, per tray —12's, 15's ...	5 0- 7 0
Celosias, 48's, per doz. ...	9 0-10 0
Chrysanthemums, in variety, 48's, per doz. ...	15 0-21 0
Crotons, doz. ...	30 0-45 0
Cyrtomium ...	10 0-25 0

	s. d. s. d.
Erica nivalis, 48's per doz.	30 0-36 0
—60's ,,	15 0-18 0
—72's ,,	9 0-10 0
Hydrangeas, white, 48's, per doz.	24 0-70 0
Lilium longiflorum (Harrissii) 48's, 32's per doz.	15 0-21 0
Lilium lancifolium rubrum, 32's, 48's each	2 6--3 6
— —album, 32's, 48's each ...	2 0—3 0
Marguerites, 48's per doz. ...	18 0-21 0
Nephrolepis in variety ...	12 0-18 0
—32's	24 0-36 0
Palms, Kentia	30 0-48 0
—60's	15 0-18 0
Pteris, in variety	10 0-15 0
—large, 60's ...	5 0- 6 0
—small ...	4 0- 5 0
—72's, per tray of 15's ...	2 6- 3 0

Cut Flowers, etc.: Average Wholesale Prices.

	s. d. s. d.
Adiantum decorum, doz. bun.	6 0-10 0
cuneatum, per doz. bun. ...	6 0--8 0
Asparagus plumosus per bun., long trails, 6's ...	2 0--3 0
med. sprays	1 6--2 6
short ...	0 9--1 3
– Sprengeri, bun. long sprays	1 6—2 0
med. ,,	1 0—1 6
short ,,	0 4—1 0
Asters, white per doz. bun. ...	4 0--6 0
—coloured, per doz. bun. ...	3 0--6 0
—single varieties per doz. bun.	3 0--4 0
Bouvardia, white per doz. bun.	9 0-12 0
Carnations, per doz. blooms.	1 6—3 6
Chrysanthemums, white, per doz.	2 0—4 0
—bronze ...	1 6—2 6
—white, per doz. bun. ...	4 0—8 0
—bronze, per doz. bun. ...	4 0—9 0
—yellow, per doz. blooms ...	1 6—2 6
—yellow, per doz. bun. ...	6 0-10 0
—pink, per doz. blooms ...	2 0—3 0
—pink, per doz. bun.	8 0—9 0
Cornflower, blue, per doz. bun.	2 0 2 6
Croton leaves, per doz. ...	1 9—2 6
Fern, French, per doz. bun.	10 0-12 0
Forget-me-not, per doz. bun.	6 0—8 0
Gaillardias, per doz. bun. ...	1 6—2 0
Gardenias, 12's, 18's per box .	4 0—6 0
Gladiolus— —various Giant varieties, per doz. spikes ...	1 0—2 6
Gloriosa, por doz. blooms ...	4 0—5 0
Gypsophila elegans ...	3 0—4 0
—double paniculata ...	2 0—2 6

	s. d. s. d.
Heather, white, per doz. bun.	6 0—9 0
—pink, per doz. bun.... ...	4 0—6 0
Lapageria, white, per doz. blooms	2 6—3 6
Lilium auratum, per doz. blooms ...	7 6—9 0
—longiflorum long, per doz.	1 6—2 0
Lilium speciosum rubrum, long, per doz. blooms ...	2 0—2 6
— short, doz. bloom ...	1 6—2 0
—lancifolium album, perdoz. blooms, long	2 0—2 6
Lily-of-the-Valley, per doz. bun.	18 0-30 0
Michaelmas Daisies, per doz. bun. ...	3 0—6 0
Orchids, per doz.	
—Cattleyas ...	36 0-42 0
—Cypripediums per doz. blooms ...	6 0—8 0
Physalis (Cape Gooseberry,) per doz. bun.	12 0-15 0
Roses, per doz. blooms—	
—Madame Abel Chatenay ...	1 6—2 6
—Molly Sharman Crawford	1 6—2 6
—Richmond ...	1 0—2 6
—Columbia ...	2 0—2 6
—Golden Ophelia	2 0—2 6
—Sunburst ...	1 6—2 6
—Mrs. Aaron Ward ...	1 0—1 6
—Madame Butterfly	1 6—2 6
Scabiosa caucasica, per doz. bun.	3 0—4 0
Smilax, per doz. trails ...	3 0—4 0
Statice sinuata, per doz. bun.	3 0—6 0
Stephanotis, per 72 pips ...	3 0—3 6
Stock, double white, per doz. bun. ...	6 0—8 0
Sultan, white, per doz. bun.	3 0—4 0
—mauve, per doz. bun. ...	3 0—4 0
Violets... ...	2 6—3 0

REMARKS.—Chrysanthemums are the chief flowers on sale, and there has been a little more demand for them from provincial buyers during the past few days. There are ample supplies of disbudded blooms and spray blooms in bunches, the prices fluctuating according to quality. Carnations are generally firmer in price and the better quality blooms were soon sold. Red Roses are scarce, but the numbers of pink and yellow blooms exceed the demand. The value of Lilium longiflorum has fallen very low owing to large supplies, but the quality generally is good. The newest subjects in this department are a few Cornish Violets, but these suffered in transit owing to the very warm weather and were of little use when unpacked

GLASGOW.

Business in the cut flower market continues quiet with little movement in prices. Chrysanthemums are now arriving in larger quantities and will dominate trading during the remainder of the year. Disbudded blooms of Delores commanded 1/3 to 1/6 for 6's, and Phoenix, 1/-, while sprays ranged from 2d. to 4d. Gladioli are becoming dearer as the season advances and supplies dwindle. Last week they were worth 1/6 to 2/6 per dozen spikes. Carnations sold for 1/3 to 1/9; Roses for 2/- to 2/6; Lilium longiflorum (Harrissii), 2/- to 2/6 per bunch. Asters and Sweet Peas, 1d. and 2d.; Gypsophila, 4d. to 6d.; Smilax, 1/-; and Asparagus, 6d. to 9d.

The fruit market has reached the season which marks the finish of soft fruit and the approach of the American Apple trade. Business in consequence is quiet, and the prolongation of the coal strike has exerted an adverse influence, as consumption is restricted by the scarcity of money. Scotch-grown Victoria Plums advanced to 10½d. per lb.; prices for Damsons averaged 7/6 per sieve; and Blackberries at 1/2 to 1/4 per chip, are easier in price. Gros Colman Grapes from the big vine at Kippen realised 4/- per lb.; while ordinary black qualities fluctuated between 1/3 and 1/6. Prices for Oranges ranged from 26/- to 30/- per case. Bronze Melons sold for 9/- to 11/- (24's); Pomegranates, 9/- to 13/-; and new season's Smyrna Figs, 8/- to 8/6 (10 lb.) Beurré Hardy Pears realised 11/6 to 12/6 per half-case; Eureka, 14/- to 16/-; and Bartlett, 8/- to 10/-. American Apples continued to be scarce and dear, Jonathan and Gravenstein being value for 21/- per case; York Imperial, 30/- to 35/- per barrel; and Bonham, 35/- to 45/-.

On Friday Cauliflowers were freely sold at 1/6 per dozen and there was little demand for Cucumbers at 3/- per dozen. Lettuces were dearer at 2/- per dozen, and prices for French Beans kept steady at 5d. per lb.

THE WEATHER IN AUGUST.

This was a sunny and warm month, with westerly winds, without, however, any high temperatures, all the daily maxima being below 75°. It was therefore a very agreeable August, and this effect was heightened by a rainfall ample for parks, gardens and the public health, but having such a peculiar "diurnal inequality" that five of the afternoon and evening hours were entirely rainless, and the whole half-day from noon to midnight (summer time) received only three-tenths-of-an-inch of rain during the month, while the precipitation in the other twelve hours was nine times as much! Some of the falls in the early mornings were at very heavy rates; but Southport's only thunderstorm was a brief one on the evening of the 11th. The mean temperature of the month was 61¼°, or 2° above the average. A total of 204 hours of bright sunshine was recorded, or 23 hours above normal, and this was well distributed over the month. Rain fell on 16 days—the average number for August; and the amount slightly exceeded three inches in Southport and Birkdale, and 3¼ inches about Ainsdale. The shortage, a negative deviation from normal, at Hesketh Park, was scarcely half-an-inch. On the night of the 21st to 22nd the wind attained the force of a gale. Visibility was very good and ozone abundant. The lowest grass minimum temperature was 41°. *J. Baxendell, Southport Observatory.*

GARDENING APPOINTMENTS.

Mr. W. H. Wyatt, as gardener to Mrs. L. V. MILES, Burcote House, Near Abingdon, Oxon.

Mr. J. Smith, previously in charge of the gardens at gowran Castle, Southern Ireland, as gardener and bailiff to the Rt. Hon. LORD ANNALY, at Alexton Hall, Rutland. (Thanks for 2s. 6d. for R.G.O.F. Box.—EDS.)

Mr. William E. Young, for the past ten years gardener at Garth Castle, Perthshire, and previously Foreman at Taymouth Castle, Perthshire, and Stobo Castle, Peebles, also under the Parks Department of the City of Dundee, has been appointed Assistant Superintendent at Gunnersbury Park, Acton, W.3, under the Joint Councils of Acton and Ealing.

Mr. J. Gilbert, for the past five years gardener to the late A. O. HEDLEY, Esq., The Nook, Grindon, Sunderland, as gardener to WM. BLUMER, Esq., The Grange, Beech Grove, Harrogate, Yorkshire.

CATALOGUES RECEIVED.

THE BARTON NURSERIES, 75, Spilsby Road, Boston, Lincs.—Roses.

FINCH AND FLEMING, LTD., Soar Lane Mills, Leicester.—Bulbs.

M. ROWAN AND CO, 51, Capel Street, Dublin.—Bulbs.

JAMES CARTER AND CO., Raynes Park.—Lawns and sports grounds; leather jacket killer; worm killer; Plantain killer.

HEWITT AND CO., LTD., Solihull, Warwickshire.—Delphiniums and Roses; Gladioli.

MORLE AND CO., LTD., 150-156, Finchley Road, N.W.3.—Roses, fruit trees, etc.; Liliums, Begonias, etc.

ANDREW IRELAND AND HITCHCOCK, Marks Tey, Essex.—Sweet Peas and bulbs.

DANIELS BROS., LTD., Norwich.—Fruit trees, Roses, etc.

CLIBRANS, LTD., Altrincham.—Roses, fruits

Foreign.

HARLAN P. KELSEY, Salem, Massachusetts.—Trees and shrubs.

ERNST BENARY, Erfurt, Germany.—Novelties.

THE

Gardeners' Chronicle

No. 2075.—SATURDAY, OCTOBER 2, 1926.

CONTENTS.

Alpine garden—
  Cardamines ... 267
Apple crop in France, the cider ... 261
Apple crops, Canadian and U.S.A. ... 262
Balfour, Sir Isaac Bayley, Memorial to ... 261
Books, notices of—
  Botanical Magazine 262
  The British Herbal 270
  The Law of Wills for Testators ... 272
Bulb garden—
  Allium triquetrum... 269
Bulbs for forcing, small 276
Bunyard Silver Cup for a new Apple ... 262
Cantuas ... 269
Castleford, Monmouthshire ... 268
Dresden International Exhibition, closing of 261
Florists' flowers—
  Dwarf Chrysanthemums ... 274
  Sweet Pea Avalanche 274
Fruit crops, remarks on the condition of the ... 276
Fruit register—
  Black Currant Davison's Eight... 275
"Gardeners' Chronicle" seventy-five years ago ... 263
Garden notes from south-west Scotland 268
Garden tools and appliances on sale or return ... 272
Gladiolus primulinus hybrids ... 276
Gladstone, the late Sir John, tribute to ... 261
Hardy flower border—
  Clematis integrifolia 267
  Funkia Dr. Thos. Hogg ... 267
  Solidago missouriensis ... 267
Home Aquarium Exhibition ... 262
Indoor plants—
  Clerodendron Thomsonae ... 266
  Maurandya Barclayana ... 266
  Rhodochiton volubile 266
Kew, notes from ... 268
Levavasseur, M. Lucien 262
London Fruit Shops, Window-dressing competition for ... 262
National Sweet Pea Society ... 261
Nursery notes—
  Messrs. Blackmore and Langdon ... 273
Orchid notes and gleanings—
  Brasso-Laelio-Cattleya The Baroness ... 266
  Laelio-Cattleya Champagne ... 266
Orchids, new hybrid... 266
Parks and gardens, public ... 274
Plants new or noteworthy—
  Anthemis sancti-johannis ... 270
Societies—
  Abergavenny Agricultural ... 277
  Banff Horticultural 277
  Elgin Horticultural 277
  Girvan Horticultural 278
  Guildford Gardeners' 279
  Manchester and North of England Orchid ... 278
  Moray and Nairn Foresters... 277
  Royal Horticultural 278
  Royal Scottish Arboricultural ... 277
Transplanting, on ... 261
Trees and shrubs—
  Buddleia variabilis nanhoensis ... 266
  Carpenteria californica ... 266
  Veronica Catarractae 266
Week's work, the ... 264

ILLUSTRATIONS.

Anthemis sancti-johannis ... 271
Begonia houses at Twerton Hill, Bath, view in one of the... 272
Black Currant Davison's Eight ... 275
Cantua buxifolia ... 269
Carpenteria californica at Castleford, Chepstow ... 265
Cattleya Mimosa var. Golden Queen ... 267
Dahlia Irma ... 268
Delphiniums: Howard H. Crane, 273; Mrs. Foster Cunliffe ... 273
Levavasseur, M. Lucien, portrait of ... 262

Average Mean Temperature for the ensuing week deduced from observations during the last fifty years at Greenwich, 52.5.

Actual Temperature—
The Gardeners' Chronicle Office, 5, Tavistock Street, Covent Garden, London, Wednesday, September 29, 10 a.m. Bar. 30.4. Temp. 56°. Weather, Cloudy.

On Transplanting.

In all gardens in the making—and after all what garden is not—the subject of transplanting preoccupies the mind of the gardener at all seasons of the year. For to succeed in the making of a garden it needs forethought and preparation and in perfect garden work improvisation should have no place. As the garden grows so plants which seemed to have room enough begin to encroach on one another; others are found not to fulfil the hopes reposed in them and others again show signs of dislike to the quarters assigned to them. Particularly is it true that at this bosky time of the year the gardener must draw up his plans for autumn transplantation and those plans ought to include the earliest possible preparation of the ground. A hole dug at the last minute, particularly if it be made in grass land, is apt to be rather a burial place than one of renewed growth for the young, transplanted tree. The prospectus includes, therefore, the preparation of the ground, the assembling of a supply of suitable compost, and, no less important, the preparation of stakes of suitable size and strength, for if a transplanted tree or large shrub is to thrive it must be staked at the time of planting and the stake should be such as will serve for at least a year or two. Moreover, inasmuch as the gardener—like the poet—must look before and after, the preparation for staking will remind him of the need to examine the stakes and ties of all recently transplanted plants. Recent winds will, no doubt, have acted as a reminder that such work should be one of frequent garden routine. It is but a few days ago that we saw a striking example of folly of neglecting this work. The top ten feet or more of a Cupressus macrocarpa was blown clean off a tree of some thirty feet high. On examining the fractured end it was apparent that an old tie made some four years before had been left on. In course of time the tie, having worked into the stem, was dragged away from the stake and carried up as the tree grew. Like a string which cuts a cheese the tie, with the wind as accomplice, had forced its way deep into the stem, leaving so little sound wood that the wind found no difficulty in beheading the tree. Needless to say, the time at which transplanting should be done varies greatly with the subject, but it is a good general rule that deciduous plants should be shifted as early in the autumn as possible and evergreen things as late in the spring as may be. But experience makes wise men wary of general rules. For example, few gardeners have not had to deplore the loss of many Coniferous trees after transplantation. Sometimes the result is due to the length of time the young trees are out of the ground. That may be remedied by going to fetch them from the nursery and planting them forthwith. Even so, however, spring planting which is often recommended for Coniferous plants is beset with risks. In order to test this question we carried out the following experiment. Fifty Lawson's Cypress were obtained in the autumn. Half of them were planted immediately in their permanent quarters, staked and protected by two rows of wire netting loosely packed with bracken. The other half was laid in carefully, protected in a similar way, and planted on a favourable day in spring. The result, which confirms many previous experiences, was emphatically in favour of the autumn planting. Of the autumn planted trees, only 4% have succumbed and of the spring planted more than 50% have died. At the same time building operations required that a well established Yew hedge which must be more than ten years old should be removed. It was removed in autumn and now every plant save one is flourishing. The one which looks brown is, moreover, at the end of the row and we have no doubt but that it suffers not from transplantation but from exposure. The facts which tell so heavily against the spring-planting of Conifers are in the first place the capriciousness of the weather and in the second, the behaviour of the soil. Beginning to dry and grow warm in spring, the soil, if it be at all on the heavy side, tends to lift itself up so that although the ground be well rammed at planting time it gradually works loose again and requires frequent attention if it is to be kept in place around the roots. Needless to say, careful watering may prevent this condition—fatal to transplanted things—from arising; but on balance we are ourselves determined to plant out Coniferous trees in autumn and to ensure their survival by the method of protection which we have described. There is ample opportunity for the plant physiologists to enquire into the behaviour of plants difficult of transplantation—Oaks and Willows for example—for it should be possible once the cause of failure is known to employ means of eliminating it. One word more: as every good gardener knows, if the preparation be sufficiently careful and long, very large trees may be transplanted successfully, but in their case the preparation should begin at least a year before the operation of transplantation is undertaken. By curtailing the root system a year before, not only is the work of removal made easy, but the chances of success are made more secure.

National Sweet Pea Society.—The Annual General Meeting of the National Sweet Pea Society will be held in the Essex Hall, Essex Street, Strand, London, W.C.2, on Tuesday, October 19, 1926, commencing at 3 o'clock in the afternion.

Cider Apple Crop in France.—A statement regarding the Cider Apple crop in France has been issued by the General Confederation of French growers of cider fruit. After a reference to various reports alleging that there was a shortage of cider Apples, which would cause a rise in prices to the detriment of the consumer, the Confederation declares that it has made enquiries in the chief centres of production as a result of which it has arrived at the conclusion that, although the year will not be an exceptionally good one, there will be a fair average crop of Apples.

Closing of the Dresden International Exhibition.—We learn that the International Horticultural Exhibition being held at Dresden this year in celebration of the centenary of the Dresden Society known as "Flora," will be closing on the evening of the 11th of October. It has been open since April and has been a great success, having been visited by many thousands of people.

Memorial to Sir Isaac Bayley Balfour.—An interesting ceremony took place in the Royal Botanic Garden, Edinburgh, on Tuesday, September 28, when Sir Herbert Maxwell, Bt., unveiled a tablet to the memory of the late Sir Isaac Bayley Balfour, Professor of Botany in the University of Edinburgh, and Regius Keeper of the gardens from 1888 to 1922. Designed by Sir Robert Lorimer, the tablet takes the form of a slab of grey freestone built into the wall encircling the terrace below the plant houses and bears the following inscription: "This stone commemorates Sir Isaac Bayley Balfour, Keeper of these Gardens, 1883-1892, and is set here by his colleagues and friends to record the zeal with which he worked and the affection which they bore him." A further memorial will take the form of public gardens and a rest house on the estate of the Forestry Commission, Benmore, Argyllshire.

Tribute to the late Sir John Gladstone.—Warm tributes were paid to the memory of the late Sir John R. Gladstone, Bart., of Fasque, Kincardineshire, at a recent meeting of the Aberdeen Branch of the Royal Scottish Arboricultural Society, held in the beautiful woods of Learney, Aberdeenshire. Mr. John Michie, M.V.O., president of the branch, submitted the following resolution:—"That this meeting of the Aberdeen Branch of the Royal Scottish Arboricultural Society respectfully desires to put on record its deep sense of the loss sustained by the science of forestry generally, and by this branch of the Arboricultural Society in particular, through the death of Sir John R. Gladstone, Bart., of Fasque. Sir John was an enthusiastic forester, and, on succeeding to his large estates, by planting and otherwise, identified himself with the science and practice of forestry. He became a member of the Royal Scottish Arboricultural Society in 1900, and was elected to the presidency in 1925; and again nominated to that office for this year (1926), which honour he was obliged to decline through ill-health. He early became a member of this branch of the Society, and on two occasions entertained them by excursions to his estates of Fasque and Glendye. He was elected president of the branch in 1922, the duties of which he discharged with much ability and acceptance for three years. His marked ability, uniform courtesy, kindness and urbanity evoked the most profound respect of all members. This branch also desires most respectfully to convey to Miss Gladstone its heartfelt sympathy and condolence in her great bereavement, and that an excerpt of this minute be sent to Miss Gladstone." Lord Clinton seconded. He said he was glad they had given him the opportunity of doing so, as Sir John Gladstone was his nearest neighbour, and the loss was to him really a personal one, but quite rightly they had shown his loss to forestry in general. He was a great planter and showed an admirable example to other landlords. He regarded forestry as part of the main business on his estate, and he was most successful in carrying that out. His death meant a great loss to the county of Kincardine. He was a firm friend, good neighbour, quiet and very unobtrusive man of business, and did a very great amount of work for the county and forestry. The resolution was sympathetically passed, the company standing.

Bunyard Silver Cup for a New Apple.—The Bunyard Silver Cup, offered under the auspices of the Royal Horticultural Society for the most promising seedling Apple which has not been previously exhibited at any of the Society's shows, has never, so far, been won, although there have been occasions when varieties have been reserved for the award. The conditions are that six fruits of a seedling Apple must be exhibited this year and if considered of sufficient merit, six more must be shown in 1927 in order that the judgment of the previous year may be confirmed. So far this season no entry has been forthcoming for the Cup, but we would remind readers who have new Apples of merit that have not been previously exhibited that they have a chance of winning this valuable cup, of which so little seems to be known to growers. The forthcoming Fruit Show, October 12 and 13, offers an excellent opportunity for the exhibition of new Apples.

Canadian and U.S.A. Apple Crops.—The total commercial crop of Apples in Canada, based on the condition of the crop at the beginning of August, is estimated by the Canadian Department of Agriculture at 2,849,400 barrels, which compares with 2,883,400 barrels secured in 1925, and the five-year average of 3,546,500 barrels. The latest estimate is about 200,000 barrels less than was anticipated a month earlier, mainly owing to poorer prospects in Nova Scotia. The Department states that in general the quality of the crop is uniformly good, and that a normal size and fairly good colouring is promised. As regards prospects in the various provinces the commercial crop in British Columbia, estimated at 1,208,500 barrels, will be the largest on record, exceeding the previous largest (in 1923) by nearly 100,000 barrels. A good yield is also anticipated in Quebec, where the crop of 142,400 barrels is double that of 1925, but in the other three provinces yields are below those of last year, Nova Scotia expecting a crop of 750,000 against 889,750 barrels; Ontario 714,500 against 950,100 barrels, and New Brunswick 34,000 against 40,000 barrels. Crop prospects in the United States improved during July, and the condition on August 1 indicated a commercial production of 39,559,000 barrels, which would be the largest figure ever recorded. In 1925 the production amounted to 33 million barrels, while the five-year average is little over 30 millions. The increase on the year is fairly general throughout the producing States, and is greatest in Virginia, where this year's estimate of 3,107,000 barrels compares with 1,440,000 barrels in 1925. A fair increase is also expected in Washington, which produces about one-fourth of the entire United States commercial crop, this year's yield in that State being estimated at 10,091,000 barrels against 8,570,000 barrels last year.

M. Lucien Levavasseur.—The subject of our portrait this week is one of the best known and most justly respected of the French nurserymen who have done so much to make French horticultural products world-famous. He is the proprietor of the Pépinières Louis Leroy, of Angers, founded in 1795, and acquired by M. Levavasseur in 1907; a younger son in a family long celebrated for their horticultural activities, he studied his profession in Germany and in England, his proficiency in the English language especially enabling him to keep in close touch with horticulture in this country and in America. The business of the nursery is indeed largely on the export side, and every year more than twenty-five million young plants are exported to the four quarters of the globe, notably to North and South America, South Africa, India, the colonies, and the far east. The subjects grown are far too numerous to mention in detail, but they include trees of all kinds, forest, fruit and ornamental plants of every description, climbing and dwarf Roses, Vines, etc. M. Levavasseur has also a nursery at Tiflet, near Rabat, the "Pépinières Franco-Marocaines," which is a busy centre of production and distribution for the north of Africa. He rendered many services to his country during and after the war, and is a Chevalier du Mérite Agricole; he has won innumerable distinctions for his firm at various exhibitions, and has frequently acted as judge. In recognition of the assistance he has rendered to the expansion of French horticultural trade he has been appointed by the Minister of Commerce a "Conseiller du Commerce Extérieur de la France," a distinction which few horticulturists can have better merited. During the present year M. L. Levavasseur has occupied the exalted position of Mayor of Angers.

M. LUCIEN LEVAVASSEUR.

"Botanical Magazine."—The September issue of the *Botanical Magazine*, which comprises Part IV of Vol. CLI, contains illustrations and descriptions of Rhodospatha Forgetii, Cotoneaster ambigua, Primula Inayatii, Fritillaria libanotica, Cirropetalum miniatum, Brunnera macrophylla, Sargentodoxa cuneata, Diplomeris hirsuta, Anemone glaucifolia and Scabiosa anthemifolia. The most interesting of the newer plants from the garden point of view, are:—Cotoneaster ambigua, t. 9106, a Japanese species with black fruits, forming a shrub up to 3m. high, with straggling, curved branches; the plant is hardy, flowers freely every year and produces plenty of berries. Primula Inayatii, t. 9107, described by Mr. Besant in *Gard. Chron.*, March 3, 1923, and illustrated in the same issue (Fig. 59), has flowers of lilac-purple colour with a yellow eye, and both the peduncle and leaf stalks are reddish. Sargentodoxa cuneata, t. 9,111 and t. 9,112, a climber of an entirely new genus and apparently quite hardy in the south and south-east of England and in Ireland, producing male and female inflorescences, the latter succeeded by clusters of bluish-black fruits about the size of peas. And Anemone glaucifolia, t. 9,114, which was described in *Gard. Chron.*, July 1, p. 12, and illustrated in *Gard. Chron.*, July 8, 1922 (Fig. 7), under its synonym A. glaucophylla, a beautiful species with solitary, mauve-coloured flowers. Of the older plants illustrated, the more interesting are Cirropetalum miniatum, t. 9,109; Brunnera macrophylla, t. 9,110, an old garden plant with flowers very much like those of a Forget-me-not; Diplomeris hirsuta, t. 9,113, a rare Orchid found in the Teesta valley in Sikkim; and Scabiosa anthemifolia, t. 9,115, illustrated and described in *Gard. Chron.*, September 11, 1920 (Figs. 57 and 58), under its synonym of S. Columbaria.

Sturry Court.—Sturry Court, near Canterbury, which was offered to the Royal Horticultural Society by Lady Milner, and not accepted, has been presented to King's School, Canterbury. Although the deed of gift will be completed shortly, the house and grounds will not be ready for some months for the use for which they are intended, but after the necessary alterations have been made the junior or preparatory department of King's School will be removed from the precincts of the Cathedral to Sturry Court.

Grants for Rural Roads.—The Roads Department has notified the authorities concerned that the special provision from the Road Fund of £750,000 in respect of unclassified roads during the financial year 1926–7, mentioned in Circular No. 234 issued by the Department in March last, has been increased to £1,300,000.

Window-dressing Competition for London Fruit Shops.—A window-dressing competition open to London fruit shops will be held under the auspices of the Imperial Fruit Show Committee and the Empire Marketing Board on the 26th, 27th and 28th inst. There will be several classes and in each class a Silver Cup valued £100, to be won outright, and especially designed for the occasion, will be presented by the Empire Marketing Board. In addition, there will be valuable money prizes. The scheme is in connection with the movement for the sale of Empire foodstuffs. First-prize winners will be given facilities, if they desire, to reconstruct their displays at the Imperial Fruit Show. The competition is open to all retail fruit shops within a radius of twelve miles of Covent Garden, and the material used for dressing windows may be fresh fruits grown anywhere in the British Empire, and may include a small selection of dried, canned, and bottled fruit produced within the Empire.

Leicester's New Cemetery.—The prize of £100 offered by the Leicester Corporation for the best design for laying out a new cemetery has been won by Messrs. Thomas Mawson and Sons.

A Home-Aquarium Exhibition.—An exhibition under this title was held by the British Aquarists' Association in the rooms of the British Sea Anglers' Society, 4, Fetter Lane, London, on September 24, 25 and 27. The chief fish were the golden carp, popularly known as gold fish, of which there are very many types, and there were also numerous aquatic plants suitable for small and large aquaria, as well as for fish ponds. In many gardens gold fish are a great attraction in the ornamental waters and may not infrequently be found in tanks in greenhouses and conservatories, so that the exhibition had an interest for gardeners. The several forms of gold fish were classified in the schedule as clear red varieties, clear primrose-yellow varieties, clear pearl varieties, variegated varieties, fantails, scaled; fantails, scaleless; Japanese fringetails; telescopes, both scaled and scaleless; lionheads, orandas, nymphs and comets. Most gardeners are acquainted with the coloured varieties, but to many the fantails which have, as the name suggests, enormous fan-like tails, and the telescopes, in which the eyes of the fish protrude forward as though at the end of short columns, and the curious lionheads are not well-known, although many might like to possess them. There were also exhibits of golden tench, golden orfe, carp, roach, rudd, bass, perch and other fresh-water fish of temperate countries, as well as some beautiful tropical fish, reptiles and other inhabitants of ponds and lakes. Several devices were exhibited for aerating the water in aquaria, one of the most useful being the D.A.P. Aerator, comprising a container charged with air by means of a pump, the air being led from the container into the water through an automatic regulating valve. A rubber pipe terminating in a glass tube is led from the apparatus into the aquarium, and the air bubbles on their way to the surface oxygenise the water. With the aid of this apparatus it is claimed that even fish needing running water may be kept healthy in an ordinary aquarium. Another interesting exhibit was the Thomas Patent Lever-Sluice Aquarium with a tank above, known as a super-tank, from which the water drips slowly into the aquarium, replacing the amount drawn off when a sluice is opened at the bottom for the purpose of cleansing the latter of foul water and matter. Mr. Amos Perry showed a variety of aquatic plants suitable for small aquaria as well as large ponds and lakes, and an exhibit of this nature was also shown by Mr. L. B. Katterns, of 96, Gaisford Street, N.W.5. Those who consider that fish in aquaria require little or no food beyond perhaps a few ants' eggs, would be surprised at the assortment of fish foods shown by Messrs. Spratt's Patent, Ltd., 24-25, Fenchurch Street, E.C.

The Most Popular Fruits.—To aid the funds of the Willesden Hospital a ballot was recently organised, and entrants were invited to place the various fruits in what each considered to be the order of their popularity. The result has now been made public, and it is found that the voting placed the fruits in the following order:—1, Apple; 2, Orange; 3, Banana; 4, Strawberry; 5, Grape; 6, Pear; 7, Cherry; 8, Plum; 9, Raspberry; 10, Gooseberry; 11, Pineapple; 12, Black Currant.

End of Summer Time.—In accordance with the Summer Time Act, 1925, Greenwich time will be restored at 3 a.m. to-morrow (Sunday), the 3rd inst., when all clocks should be put back to 2 a.m.

Appointments for the Ensuing Week.—Sunday, October 3: Wakefield and North of England Tulip Society's meeting. Monday, October 4: Romsey and District Gardeners' Association's meeting; National Chrysanthemum Society's Floral Committee meets. Tuesday, October 5: Royal Horticultural Society's Committees meet; Royal Caledonian Horticultural Society's meeting. Wednesday, October 6: Abingdon Horticultural Society's meeting. Friday, October 8: Royal Horticultural Society of Ireland meeting. Saturday, October 9: British Mycological Society's foray with the British Ecological Society at Box Hill.

"Gardeners' Chronicle" Seventy-five Years Ago.—*Heating Apparatus.*—Among the matters of horticultural interest in the Great Exhibition, there is a very humble one in a corner of the hardware department, in Class 22, No. 408, which, though late, and only just remarked, deserves to be placed on record. We allude to a model of a heating apparatus, from Mr. Michael M'Sherry, of 3, James Street, Limerick, intended for greenhouses and similar buildings. The model looks so much like a cubical iron box, that it may be well missed by any one who does not take pains to find it. The plan of this apparatus is described by the exhibitor in the following manner: "To be made of boiler plate iron, with a metal front, for heating by circulation of air. The flame and smoke from the furnace pass under the stove to the extreme end, and then rise to the two sides, return to the front and get over the top to the chimney, where they do not escape until they pass all round the stove and heat every part of it. The air of the house to be heated is drawn in brick flues under the floor to the under compartments of the stove, passes in them to the extreme ends, then rises to the upper divisions, and finally flows back into the house over a water tank. In addition to this, there is a hot-air box on each side of the fire, through which external air is circulated, as well as through hollow fire bars, discharging the great body of heat (which they usually absorb), into the house and rendering it available for bottom heat. The stove is to be set in brickwork, and as the outside of it is as hot as any part, much additional heat will be obtained by leaving a space of two inches between the stove and brickwork, they bringing external air to act on the two sides and pass into the house." We understand that several of these apparatus have been erected with great success, near Limerick, without the hollow fire bars, hot air boxes, or outside casing, which have been late additions. The size of those in use (for houses fifty to sixty-six feet) is five feet long, three feet wide and eighteen inches high; for larger houses it is proposed to make them six feet long. Our hothouse heaters will do well to study Mr. M'Sherry's model. *Gard. Chron.*, *October* 4, 1851.

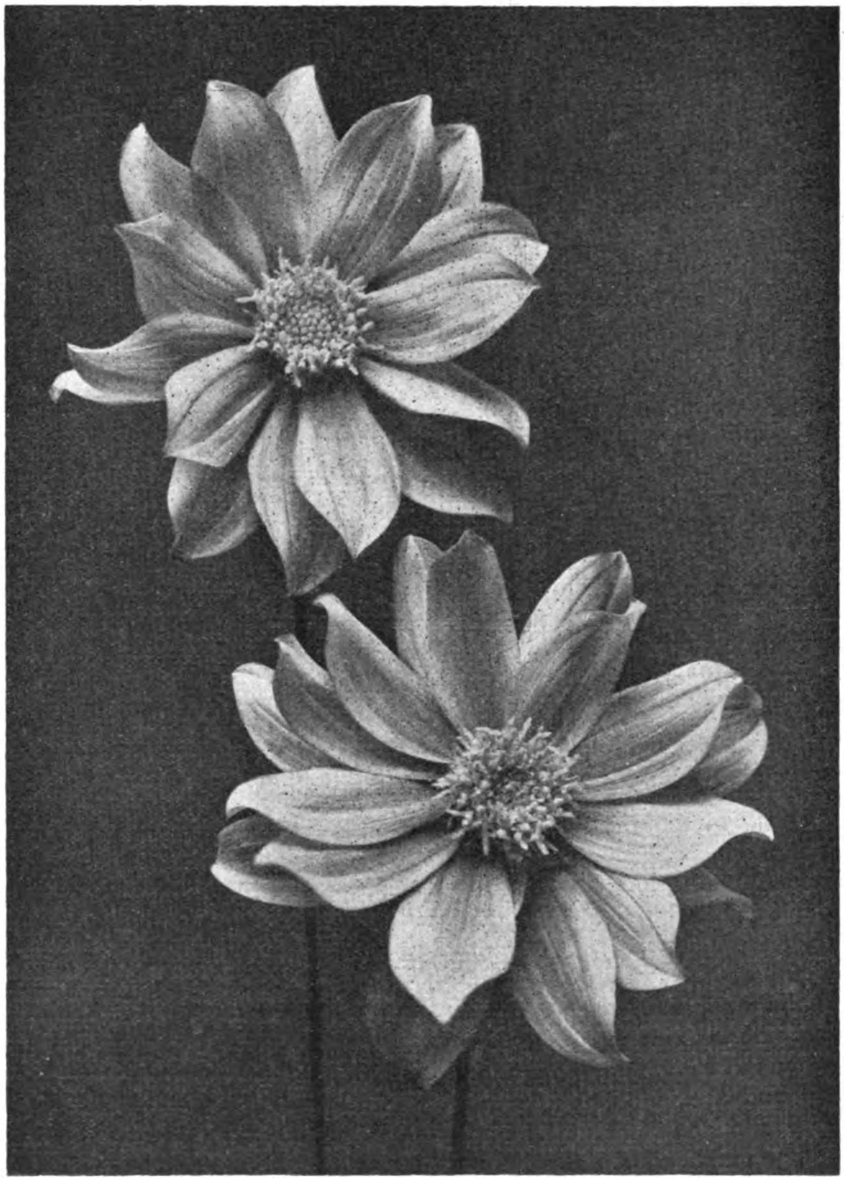

FIG. 122. DAHLIA IRMA.

A miniature Paeony-flowered variety selected by the Joint Dahlia Committee for trial at Wisley, September 21. Flowers rose-pink and crimson. Shown by Messrs. Burrell and Co. (see p. 241).

Publications Received.—*A Year in My Flower Garden*, by E. T. Brown; Chapman and Hall, 11, Henrietta Street, Covent Garden, W.C.2; price 7/6 net. *Cotton and its Production*, by W. H. Johnson, with an introduction by Sir Wyndham Dunstan; Macmillan and Co., Ltd., St. Martin's Street, W.C.; price 30/- net. *The Days of My Life*, by Sir H. Ryder Haggard; two volumes; Longmans, Green and Co., 39, Paternoster Row, E.C.4; price 28/- net.

The Week's Work.

THE ORCHID HOUSES.

By J. Collier, Gardener to Sir Jeremiah Colman, Bart., Gatton Park, Reigate, Surrey.

Orchids in Bloom.—Cattleyas, Laelias and the many beautiful hybrids from these Orchids that bloom during the late autumn will now be commencing to develop their flower-spikes. The plants should be placed in the lightest position in the houses, near to the roof-glass, and afforded sufficient water at the roots to keep them plump and healthy. As their season's growth nears completion a thorough examination should be made for the presence of scale insects which are more likely to be found on the old pseudo-bulbs than on those made during the present year. These pests usually secrete themselves under the loose skin and are frequently to be found at the apices of the pseudo-bulbs in the crevices formed by the remnants of the old flower sheaths and also around the eyes at the base. Where it is found that they cannot be removed by sponging with a suitable insecticide a pointed stick or small, stiff brush may be employed for the purpose, but in doing so great care should be taken not to cause damage to the rhizomes and buds.

Spring-flowering Cattleyas.—Plants of the spring-flowering Cattleyas, such as C. Trianae, C. Mendelii and their many hybrids will have finished their growths and consequently will require less water at their roots. They should be exposed to all the sunlight available in order to enable them to become thoroughly hardened and matured. During the winter they should be afforded only sufficient moisture to keep the pseudo-bulbs plump.

Laelia.—The dwarf-growing Laelia pumila that has been in the cool house during the summer will be benefited by being removed to an intermediate temperature and hung near the roof-glass. The sunlight will assist the flowers to open and favour the development of the new growths. If allowed to remain in the cool house when the nights are cool and damp the flowers will become spotted. Scale insects are a great pest to these Orchids and they increase very rapidly if not eradicated. The plants will thrive in shallow Orchid pans with only a thin layer of Osmunda-fibre as a rooting medium. The roots should be kept moist all through the growing season..

THE KITCHEN GARDEN.

By F. Streeter, Gardener to Lord Leconfield, Petworth Park, Petworth Sussex.

Celery.—See that Celery is well-supplied with moisture and a plentiful supply of liquid manure. Proceed with the earthing up as the plants become fit. The crop is exceptionally promising this season, and I have not noticed nearly so much rust disease as usual. When earthing up with soil this should be made firm on the slopes; keep the centre open until the final earthing takes place. This will prevent the rain from washing down the banks and the hearts of the plants from rotting. Use the earliest varieties first as these will not withstand frost to the same degree as the later and hardier varieties.

Main Crop Potatos.—All Potatos have finished their growth and the tubers should be lifted as quickly as possible. Select the finest specimens if required for autumn exhibition and place them in boxes of sand until a day or so before the the show, when they should be washed. Select the seed tubers and place them in trays. Stop lifting each day in time to allow the crop to be picked up and stored. Where large quantities are grown clamping is undoubtedly the best method of storing Potatos. Select a site slightly above the level of the ground and place a good layer of straw in position and on this carefully build up the Potatos, selecting good-sized tubers, closely packed together, for the outside layer and on which a good depth of straw must be placed to exclude frost. Take the greatest care that no diseased tubers are included and dust the clamps well with freshly-slaked lime between each layer. The heap should be left uncovered for a few weeks, when about one foot of soil should be placed over the whole clamp, arranging three or four bunches of straw along the top to act as ventilators to the heap. Clear every particle of rubbish from the ground when the crop is harvested and burn it.

Celeriac.—Keep this crop free from weeds and give the roots plenty of moisture should the ground be dry. This valuable crop is not grown to anything like the extent it deserves to be.

HARDY FRUIT GARDEN.

By W. Auton, Gardener to Viscount Elveden, Pyrford Court, Woking, Surrey.

Peaches and Nectarines.—It is of the utmost importance to keep these trees clean and healthy during the remainder of the season so that the leaves may carry on their function of sap-elaboration and bud development until the last. The fruits of most of the late varieties have now been gathered, and where red spider is present on the foliage the garden engine or syringe should be used with force to dislodge it. If the trees have been given proper attention during their season of active growth in the matters of disbudding and stopping, all the pruning that remains to be done is the removal of the wood that has fruited, together with the foreright shoots which are not needed. If worn-out trees are to be replaced and young ones are being grown on for this purpose, early planting can be easily carried out, and should be done so soon as possible. If the trees have to be purchased, however, it will not be possible to plant until the end of the present month or beginning of November, but the stations should be prepared for them immediately. If trees are to be planted at the foot of a newly-erected wall the border should be prepared thoroughly over its whole length, giving due attention to the matter of drainage, which must be ample. Where the soil is a fibrous loam of good quality the incorporation of plenty of lime rubble with it will suffice to make it suitable, but where the soil is naturally poor it is better to remove it and make up the border with good loam to which may be added lime rubble and a little coarse bone-meal. See that the border is thoroughly consolidated before planting the trees, as a firm rooting-medium is essential. On a low wall, dwarf, fan-trained trees should be planted, but on a high wall, if standards and dwarfs are planted alternately, the space will be much more quickly furnished.

THE FLOWER GARDEN.

By F. C. Puddle, Gardener to Lord Aberconway, Bodnant, Taly-Cafn, North Wales.

Anemones.—If a well-drained and sunny border is available, tubers of Anemone fulgens, A. hortensis and the various garden forms of A. coronaria, which include the popular St. Brigid strain, may be planted for early flowering. If a succession is required the tubers may be planted at intervals until March.

Helleborus orientalis.—This elegant plant is worthy of more extended cultivation for blooming in the early days of the year when few flowers are available in the open. Moreover, the flowers, which range in colour from white, pink, to deepest crimson, withstand the winter storms and are so lasting that they carry their display well into the spring. The present is perhaps the best time to make new plantations and to lift and divide any excessively large clumps. Helleborus orientalis is not exacting in its cultural demands and may be planted in any shaded position. It may be naturalised in woodland and is very effective when associated with evergreen Ferns.

Hardy Cypripediums.—There are no more interesting and beautiful plants for shaded positions in the rock garden or sheltered nooks in the flower garden than the hardy Cypripediums, and I believe that they would be much more extensively cultivated but for the fact that they are generally considered difficult to grow; the trouble, however, usually arises through incorrect planting. Cypripediums may be planted at any time between October and March, but it is better done so soon as possible after the current season's growth has died down. A bed composed chiefly of peat and leaf-mould with a sprinkling of sand, will form an excellent rooting-medium for the north American species, which include C. spectabile, C. humile, C. californicum, C. parviflorum and C. pubescens. The bed should be moderately well-drained in order that it may keep moist in summer, and not excessively wet during the winter. When planting the crowns, the surface of the bed should be removed to a depth of about one inch; the roots should be spread out horizontally and the soil replaced so that the roots are one inch deep, and the tips of the crowns just showing above the surface. The Asiatic species, C. macranthon, and its variety C. ventricosum, are more at home in a slightly more loamy compost, whilst the European species C. Calceolus is benefited by the addition of a little calcareous soil. In all cases it is essential to success that the roots be kept near the surface and placed horizontally. They only grow downwards (to any extent) when they are in direct contact with the side of a rock. Established plants will be benefited by an annual top-dressing of leaf-mould and sand, which should be applied at this season. Hardy Cypripediums may be effectively interplanted with dwarf Ferns, but they should not be associated with any plants which require frequent transplanting, as this may cause serious injury to the roots of the Cypripediums.

FRUITS UNDER GLASS.

By T. Pateman, Gardener to Sir Charles Nall-Cain, Brocket Hall, Hertfordshire.

Peaches.—Young Peach trees planted out in borders frequently make excessive growth, and may need root-pruning, an operation that should be done forthwith. Trees that have ceased to be fruitful through old age or weakness of growth due to the compost becoming exhausted should be removed and vigorous young specimens grown specially for the purpose on walls outside planted in their places. It is surprising what large trees may be transplanted successfully provided a little care is taken when carrying out the work. It is important that the soil should receive a thorough watering a day or so before the trees are lifted, after which a deep trench should be made about four to five feet from the bole of the tree, gradually working under the ball of soil and severing any roots that may have grown downwards. After this treatment the trees may be removed with little danger of disturbing the soil about the surface roots and will become re-established quickly, allowing them to be forced with safety if required. After planting the border should receive a fair amount of tepid water in order to settle the soil about the roots. It will be wise to tie the trees loosely to the wires for the time being until the soil has settled in position. Syringe the trees on frequent occasions, and, if necessary, shade them lightly on bright days. Remove the old fruiting wood and all the surplus growths that are not required for furnishing the trees. Every preparation should be made to carry out the work in the shortest possible time, therefore, prepare sufficient soil for re-planting before the lifting takes place; ordinary loam mixed with plenty of mortar rubble, wood-ash and charcoal will form a suitable rooting-medium for Peaches.

Storage of Loam.—It is wise to store plenty of loam for use during the winter. It should be placed in an open shed or otherwise protected from rain; if stored outside, cover it with rain-proof material. The loam will be available later for renovating old fruit borders or top-dressing the same. If the material is obtainable on the estate now is a suitable time to obtain the necessary quantity to meet the demand. Cut the turves in squares and stack them neatly in layers, adding lime rubble, charcoal and wood-ash to each layer in sufficient quantities as are deemed necessary. The materials will then become incorporated evenly when prepared for use. The loam should be cut and stored when the weather is dry.

PLANTS UNDER GLASS.

By John Coutts, Assistant Curator, Royal Botanic Gardens, Kew.

Ixia, Sparaxis, Babiana and Tritonia crocata. All these bulbous plants include many beautiful varieties, but for some unaccountable reason they are very much neglected in gardens. Their cultural requirements are of the simplest, as they only require the shelter of a cold frame or at most a cool greenhouse. The bulbs should be potted now, five-inch pots being a suitable size for all of them. Place five or six bulbs in each pot, and after potting stand the pots in a cold frame. Water the plants very carefully until they have made a quantity of new roots and have commenced to develop top growth. It is a mistake to cover small bulbs of this description with ashes or fibre, but the frames may be kept shaded with mats until growth commences, as the shading will conserve the soil moisture and obviate the need of frequent watering.

Crocus.—Most of the spring-flowering Crocuses may be grown in pans in which their beauty may be enjoyed in comfort and the flowers undamaged by inclement weather. They are specially useful for furnishing the alpine or small, unheated greenhouse, or indeed, a sunny living room. The large-flowered florists' varieties are equally useful for greenhouse decoration; plant the corms closely in pans or pots, five-inch pots being most suitable for this purpose. The pots may be plunged to the rims in ashes in the open until they are required for bringing indoors. It is an advantage to stand them in a cold frame, for the lights may be placed over them during long spells of wet weather. A sharp watch must be kept for mice as they are very fond of Crocus corms. There should be no attempt at forcing them or they will go blind; all they require is the shelter of a cold frame or cool greenhouse.

Iris.—The pretty Iris tingitana has become popular for pot cultivation, and the rhizomes should now be potted. Unfortunately, this plant is often spoiled by some obscure disease, the leaves, and in bad cases the flowers, being streaked with light-coloured patches having the appearance of being attacked by eel-worm. So far, this complaint seems to have baffled the plant pathologist, and some bacterial trouble seems to be indicated. Iris Imperator and I. praecox, which flower about two weeks in advance of the Spanish Iris, are also very useful for pot culture, or, if required in quantity, for supplying cut flowers, they may be grown in boxes. They require careful attention in watering and general cultural requirements. Many of the smaller species of Iris are ideal for growing in pots or pans for the alpine house or small greenhouse. They include such well-known species as I. alata, I. Histrio, I. persica, I. reticulata and its varieties, I. Bakeriana, I. Danfordiae, I. orchioides, I. sindjarensis and I. Vartanii. Iris Susiana and I. iberica are very beautiful plants for the decoration of the cold greenhouse, and strong rhizomes may generally be relied on to flower, although they are both representatives of a very difficult class of Iris known as the Oncocylus and Regelia groups. The hybrids are less difficult and include such beautiful varieties as Charon, Hecate, Hera, Hesperia, Isis, Jocate, Mars and Medusa. They all succeed under pot culture; one or two strong rhizomes may be placed in a six-inch pot, and they only require the shelter of a cold frame, or an unheated greenhouse.

FOR NORTHERN GARDENERS.

By A. T. Harrison, Gardener to the Marquis of Ailsa, Culzean Castle, Maybole, Ayrshire.

Old and Worn-out Fruit Trees.—In most gardens of any extent there are always some fruit trees, which by reason of age or inferior quality of the fruit produced are not up to standard, and may, in some cases, be occupying valuable sites against walls. These useless trees should now be marked for removal at a later date, or, if time permits, removed at once, and the sites prepared for the new trees. A large proportion of the old soil should be wheeled away, spread on some vacant plot, and the bulk of new soil, which should consist mainly of old turf with the addition of lime and wood-ash placed in position, after ascertaining that the drainage is in good order. A list of young trees required should be made out, selecting only the best varieties suitable for each district, and forwarded to the nurseryman in good time, thus insuring not only against disappointment caused by a particular variety being sold out, but also a probable first selection of the trees in stock.

Perpetual-flowering Carnations.—The flowers on young plants of these Carnations are developing rapidly, and the plants should be placed in their winter quarters at once; where they have been grown in cool houses or frames during the summer, it is now necessary to house them where thy will not only get the benefit of all the sunshine during winter, but also warmth when it is necessary. Air should be admitted freely on all favourable occasions in order to accustom them gradually to their new conditions. All secondary buds and side-shoots on the flowering stems should be removed at regular intervals, leaving only those side-shoots on the base of the stems to furnish the plants, and in course of time produce another crop of flowers. Feeding Carnations in winter is not necessary, if the plants are healthy and vigorous, as the compost in which they were potted in June is by no means exhausted, and will suffice for their needs until the days begin to lengthen.

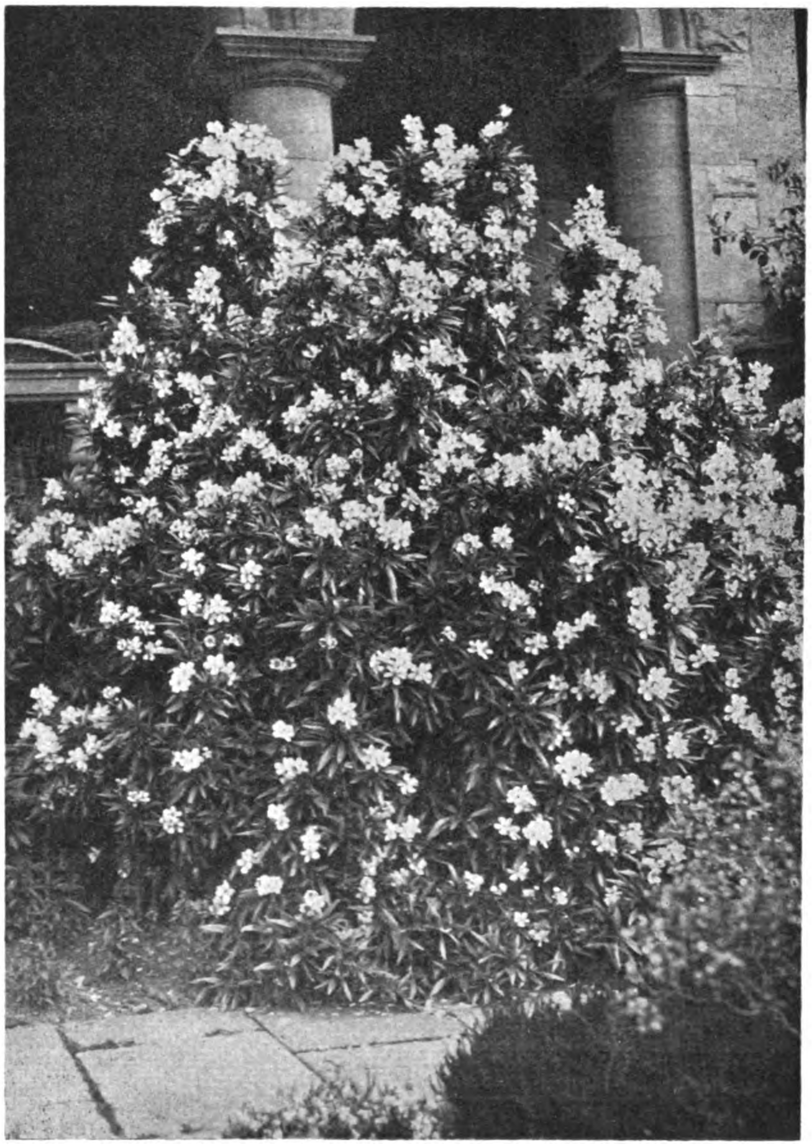

FIG. 123.—CARPENTERIA CALIFORNICA AT CASTLEFORD, CHEPSTOW.
(See p. 266.)

Amaryllis Belladonna.—There are many places up and down the country where this fine autumn flower might be planted with every prospect of success, and although usually recommended to be planted earlier in the season, it is not yet too late for northern gardeners to do so. A narrow, well-drained border, such as is often found in front of glasshouses, is an ideal place for them, but any border at the foot of a south wall, where they will be fully exposed to the sun is suitable. The bulbs should be planted about six inches deep, as they have a tendency to rise to the surface in course of time, and when once fairly established should not be disturbed. unless absolutely necessary; all that is required is an occasional top-dressing to cover up any bulbs that may have become exposed.

ORCHID NOTES AND GLEANINGS.

BRASSO-LAELIO-CATTLEYA THE BARONESS.

THE importance of some hybrids destined to become sectional types cannot be estimated when they first appear. It is not until subsequent judicious crosses reveal the distinctive characters of the type that the true value of the original cross is known.

Brasso-Laelio-Cattleya The Baroness, raised by Baron Schröder, The Dell, Englefield Green (gr. Mr. J. E. Shill), and first flowered in 1913, is a good example. This grand, bright yellow hybrid was used as a stud type at the Dell. and B.-L.-C. Amber, B.-L.-C. maculata and other showy and floriferous yellow hybrids resulted. and in other collections where B.-L.-C. The Baroness has been used similarly good results have been attained.

B.-L.-C. The Baroness was obtained by crossing Brasso-Cattleya Mrs. J. Leemann (B. Digbyana × C. Dowiana aurea) and Laelio-Cattleya Ophir (C. Dowiana × L. xanthina). It will be seen that the bases on both sides are distinct species, the only one with decided bright yellow colour being the small-flowered L. xanthina which in spite of its comparative insignificance sets the desired feature in the progeny. This remark also applies to the small-flowered Laelia flava which has transmitted its bright yellow colour in many crosses. *J. O'B.*

LAELIO-CATTLEYA CHAMPAGNE.

LAELIO-CATTLEYA Champagne, one of our new Orchids, has flowered here for the second time. It bears two flowers, each measuring four-and-three-quarter-inches across. The sepals are of champagne colour with a very faint touch of purple; the petals, which are slightly curled, are more inclined to purple, while the lip is quite purple, having an orange-yellow throat lined with purple, the edge being exquisitely frilled; the column is white. The plant has eight pseudo-bulbs on a rhizome five inches long.

The leaves, which are green, leathery and strap-shaped, are borne singly at the top of the pseudo-bulbs, the oldest of which is two inches in length with a leaf six inches long and one inch wide, while the youngest, which is now bearing flowers, is nine inches in length, and has a leaf one foot long and two-and-a-half inches wide. The old pseudo-bulbs are shrivelled and grooved, while the new one is more or less cylindrical. The peduncle is six inches long and bears two flowers on pedicels two-and-a-half inches in length.

This plant is one of the Orchids given us about two years ago by Sir Jeremiah Colman, to whom I am particularly indebted for this hospitality and kindness in showing me round his beautiful garden and magnificent collections of Orchids during my stay in England. *H. C. Javaraya, Botanic Gardens, Lal-Bagh, Bangalore.*

INDOOR PLANTS.

RHODOCHITON VOLUBILE.

THIS greenhouse twiner is admirably adapted for clothing a trellis, a pillar, or the rafters of a cool glasshouse. It is also very pretty and interesting when grown in a large pot and trained on a balloon trellis. A stock may be propagated from seeds or cuttings. The flowers are produced on axillary, elongated pedicels; the calyx is pale reddish crimson and the corolla a dull purplish red or black-maroon. The leaves are alternate, cordate and acuminate, with a few teeth.

This interesting plant grows to a height of ten feet or even more and flowers in June. It was introduced from Mexico in 1833, and is figured in *Bot. Mag.*, t. 3367.

During the summer months, R. volubile may succeed in a warm position in the open; it thrives in a rich, sandy loam.

MAURANDYA BARCLAYANA.

THIS very attractive climbing plant is a member of a small genus containing some six species. The flowers are violet-purple with a greenish and downy tube, and they are freely produced over a long period; the leaves are cordate and acuminate, coloured a pale and most attractive green.

Of quick growth, this species is perennial but is best treated as an annual; it is easily raised from seeds sown early in the year and the resultant plants are excellent for the decoration of the cool greenhouse. M. Barclayana was introduced from Mexico in 1825, the generic name commemorating Dr. Maurandy, a Spanish professor of botany, for sometime at Carthagena. *Ralph E. Arnold.*

CLERODENDRON THOMSONAE.

THE Clerodendrons comprise a group of charming twining plants that are useful in the stove or greenhouse for covering walls or lattices. One of the most beautiful of the species is C. Thomsonae (syn. Balfouri); when covered with its bright red flowers set off by pure white calyces it is very decorative amongst indoor foliage plants.

To succeed with this Clerodendron, careful attention to details of cultivation is essential. Perhaps the first item of importance is temperature; this should be kept as evenly as possible while the plant is making its growth. A temperature of 70° by day and 65° by night should be maintained until the flowers commence to open.

Although this plant is a lover of moisture, to saturate the soil with water is injurious to its constitution, for it soon succumbs when the soil becomes stagnant. Often, when the flowers commence to open, as the result of over-watering at the roots, they will drop. The flowers usually commence to open early in May, and continue to beautify the greenhouse for about six weeks. At this period of growth the temperature should be reduced, and the plants may even be removed to a cool house; in fact a cool temperature is essential if the flowers are wanted to last a while. Another item of importance is ventilation. Only a little air should be admitted through a top ventilator, and the latter should be closed at night except in warm weather. This Clerodendron may be propagated either from seeds or cuttings. *G. Barton.*

NEW HYBRID ORCHIDS.

(*Continued from August* 28, *p.* 167).

Name.	Parentage.	Exhibitor.
Brasso-Cattleya Heloise	C. Adula × B.-C. Mrs. J. Leemann	Stuart Low & Co.
Brasso-Laelio-Cattleya Burleigh Brae	B.-C. Penelope × L.-C. St. Gothard	Stuart Low & Co.
Brasso-Laelio-Cattleya eximia ...	L.-C. eximia × B.-C. Mrs. J. Leemann	Mon. Th. Pauwels.
Brasso-Laelio-Cattleya Helios ...	B.-L.-C. The Baroness × C. triumphans	Baron Schröder.
Brasso-Laelio-Cattleya Margery ...	C. Hardyana × B.-L.-C. The Baroness	Baron Schröder.
Cattleya El Paso	Ledru Rollin × Enid	Stuart Low & Co.
Cattleya Falstaff	General Pulteney × Trianae	Black & Flory.
Cattleya Glow	Moira × Dowiana	Sanders.
Cattleya Lorna	Warscewiczii × Enid	Black & Flory.
Cattleya Melita	Carmen × Enid	Stuart Low & Co.
Laelio-Cattleya Edzell	L.-C. majestica × C. Trianae	Black & Flory.
Laelio-Cattleya Phillipa	C. Dowiana × L.-C. Myrrha	Stuart Low & Co.
Laelio-Cattleya Pensero	C. Hardyana × L.-C. Mrs. Evelyn Norrie	Stuart Low & Co.
Laelio-Cattleya Robert Paterson ...	L.-C. Aphrodite × C. Tityus	Black & Flory.
Laelio-Cattleya Taormina	L.-C. Martinetii × C. Empress Frederick	Stuart Low & Co.
Odontioda Diomede	Odm. Epicasta × Oda. Chantecler	Charlesworth & Co.
Odontoglossum Arethusa	Queen Alexandra × Amethyst	Charlesworth & Co.
Odontoglossum Lawrenceae	Antinous × harvengtense	Charlesworth & Co.
Odontoglossum luteum...	Lindenii × Pescatorei	Sir Jeremiah Colman.
Odontonia Aglaon	Odontonia Thais × Odm. Aglaon	Charlesworth & Co.
Odontonia Regina	Odontonia Gladys × Odm. Doreen	Charlesworth & Co.
Sophro-Cattleya Nanette	S.-C. Blackii × C. labiata	Stuart Low & Co.
Sophro-Laelio-Cattleya Nella	C. Adula × S.-L.-C. Felicia	Stuart Low & Co.
Sophro-Laelio-Cattleya Palermo ...	C. Empress Frederick × S.-L.-C. Dorila...	Stuart Low & Co.
Sophro-Laelio-Cattleya Pauline ...	S.-L.-C. Dorila × C. Warscewiczii	Stuart Low & Co.
Vanda Emma van Deventer	tricolor × teres	W. Van Deventer, Esq.

TREES AND SHRUBS.

CARPENTERIA CALIFORNICA.

AMONG flowering shrubs this Californian plant occupies a high position, and in open, sunny districts, away from smoky towns, it will thrive and be rarely damaged by frosts. It was introduced to this country about 1880, and flowered some five years later at Godalming, Surrey. In certain places it is afforded the protection of a wall, but, as a rule, it soon outgrows its station, as in the case of the specimen illustrated (Fig. 123) which is growing at Castleford, Chepstow. This is some six feet high and eight feet in diameter, and would have been much larger if it had not been reduced from time to time. The fragrant, pure white blooms are two to three inches in diameter, and produced in terminal clusters of three to seven flowers. These appear in June and July, and a freely-flowered specimen, with the yellow stamens surrounded by the pure white petals, is most attractive. *T. W. B.*

VERONICA CATARRACTAE.

THIS hardy little shrub is useful for planting in the rock garden or in the front of the flower border, and it is one of the few of the smaller shrubby Veronicas which in this garden produce an annual crop of seedlings round about the parent plant.

The narrow, ovate leaves, which are a cheerful glossy green and sharply-toothed, are pleasing at any season, and when the foliage is surmounted by the long, loose sprays of dainty white, or pinky-white blossoms, the effect is singularly charming.

V. Catarractae, as supplied by the trade, is a semi-prostrate shrub of about one foot to two feet in height.

V. Lyallii is a dwarfer and more procumbent species, with rounder, more bluntly-toothed leaves, and then there is the "false Bidwillii," which is still smaller, possessing very similar features. Between these, presumably allied, species, there are so many intermediate forms that some authorities seem to think that they are all of the one type. Anyhow, the average amateur who, wisely perhaps, is content to take these things as he finds them and neglect the problems of identification, will not be other than delighted with any or all of these very engaging little shrubs. *J.*

BUDDLEIA VARIABILIS NANHOENSIS.

BUDDLEIA variabilis and its various splendid forms, Veitchii, magnifica, etc., are well-known in gardens. It makes a handsome summer-flowering shrub, with long, violet spikes of blossom in varying degrees of intensity of colouring. The shrub will grow ten feet to fifteen feet high, even when pruned down hard in spring, as it should be.

One of the great delights of this fine shrub is that Peacock, Red Admiral and other butterflies crowd on the honey-laden blossoms and greatly enhance their beauty, but it is not a shrub for every garden and every position. For many situations it is too tall and rampant, and for those who cannot accommodate it, I strongly recommend Farrer's miniature form, which has been given the name, B. v. nanhoensis. This I consider one of the best shrubs that Farrer collected, and each year that it flowers here, I like it better. A specimen which has been growing in a shrub border here at Stevenage for five or six years has never attained a greater height than five feet. It is an exact counterpart of the large growing growing variabilis on a dainty, miniature scale.

The spikes of flowers, six inches to nine inches long, are of a beautiful rich violet colour, honey scented and beloved of butterflies as much as its larger congener.

B. v. nanhoensis may be treated just like the large type, in being pruned to within a foot or so of the ground every spring, but when this is done I notice that it tends to throw up its strong flower growths in rather horizontal directions and unless trained up a stake this spreading habit becomes a defect in certain positions. A specimen here has not been cut to the ground for the past two years, but has had the twiggy growths shortened and many cuttings have been taken from it each year in early summer. The result this year was most pleasing, a five feet high bushy plant wreathed from top to bottom with the lovely flower-spikes, splaying out horizontally. The plant is absolutely hardy, and is attractive either in a shrub border, as a lawn specimen or even in the mixed herbaceous border. I recommend it for all gardens and especially for gardens in which there is no room for the full-sized type plant. *Clarence Elliott, Stevenage.*

ESCALLONIA MONTEVIDENSIS.

Among autumn-flowering shrubs this white-flowered Escallonia, though not one of the hardiest, is certainly a most useful and showy member of the genus. As a bush it forms a free-growing specimen of luxuriant, evergreen foliage in the milder parts of the country, with large, rounded flower trusses of white blossoms covering them in autumn. Failing success with its culture in warm and sheltered borders, Escallonia montevidensis is a most useful late-flowering evergreen for growing on a south or west wall.

In common with other Escallonias this species may be increased readily from cuttings made of half-ripened growths, inserted in sandy soil in late summer. A well-drained, sandy loam with a little leaf-mould added is the most suitable rooting medium. If considered necessary a dressing of bone-meal may be given to established bushes, but rich manure is not required or desirable, as it tends to the development of strong, sappy young growths which almost invariably suffer severely from frosts and cold winds in winter.

E. montevidensis is a native of Uruguay and South Brazil. *A. O.*

HARDY FLOWER BORDER.

SOLIDAGO MISSOURIENSIS.

This dwarf Golden Rod has flowered very well this year, and is proving a satisfactory plant. Its main defect appears to be that its flowers lose some of their colour after rain followed by bright sunshine. The plant in my garden is now three years old and has produced a sheaf of its small, light yellow flowers. These are pretty in the border and also make good cut blooms, as they are far from being stiff in outline and lend themselves well to interior decoration.

This plant is in commerce under the name of Aster hybridus luteus, but it is not frequently quoted in catalogues of British firms. *S. Arnott.* [It was figured in *Gard. Chron.*, p. 207, Oct. 6, 1923.—Eds.]

CLEMATIS INTEGRIFOLIA.

Clematis integrifolia was introduced to British gardens prior to 1594. It is a non-climbing species and thoroughly hardy, while it may also be grown in either poor or rich soils. To see it at its best, however, it needs to be grown in fertile soil, and will grow to about three feet in height. A writer of last century stated that it had bell-shaped, blue flowers of drooping habit with a bright yellow centre. I have never seen plants with the yellow centre; those I grow have all had white centres. The same writer also referred to two varieties, one with longer leaves and the other with more erect flowers. There is still another variety with double flowers which is exceedingly rare, and which I have not seen for very many years, but it is not equal in beauty to the ordinary single form. This interesting Clematis is a native of Hungary and is not recommended for brilliant beauty, but as an old, interesting plant not devoid of charm. *S. Arnott.*

FUNKIA DR. THOS. HOGG.

Not many Funkias are named after persons of distinction, but this variety honours a great horticulturist, and the plant is worthy of its name. The foliage is reminiscent of F. ovata argentea marginata, and the chalk-white margin to the smooth, gracefully curved, bright green leaves makes it a plant worth growing for its foliage alone. It gives us, however, the further pleasure of exceptionally fine spikes of bloom, taller and larger in the bell than most of the Funkias, and of a bright hue which may almost be called violet-blue.

Another advantage is that the blossoms are at their prime in autumn when Funkias as a rule have gone to seed, and have sometimes lost the beauty of their foliage through damage by snails. I managed to kill slugs that began to worry my Funkias by saturating the soil with a solution of permanganate of potash, but the shelled snails were able to protect themselves from the chemical, and when the latter had disappeared they returned to their succulent salad. I syringed with liquids and dusted with powders, but the weather and a shady situation suited the Funkias admirably, and they made new leaves so rapidly that the snails could generally find an untained meal. I have the consolation that they ignored neighbouring Auriculas, Primulas and Violas, and the Funkias are better able than these to throw up new foliage when one batch has been demolished. There was the further advantage that I knew just where to hunt for the snails, and after a persistent campaign the garden seems to be practically freed of this particular pest. *A. J. M.*

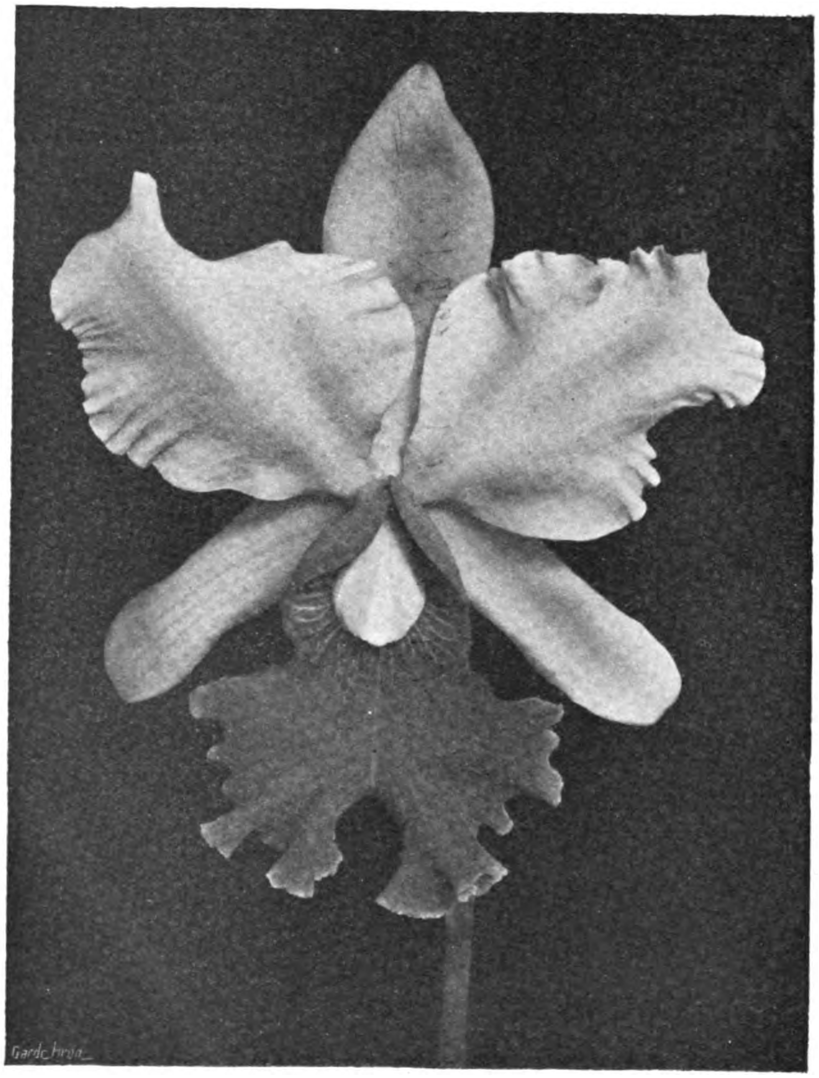

FIG. 124.—CATTLEYA MIMOSA VAR. GOLDEN QUEEN.

R.H.S. Award of Merit, September 21. Flowers yellow and ruby. Shown by Messrs. Cowan and Co. (see p. 254.)

ALPINE GARDEN.

CARDAMINES.

Few will hesitate to give the first place among the Cardamines to the double form of our native C. pratensis. For three or four months this plant will yield sheaves of its Stock-like flower-heads, which are a delightful shade of pale lilac. Though it prefers the waterside, it will often succeed in the drier parts of the rock garden. A well-known writer who wrote of this plant being "generous with self-sown seedlings which come true," is surely wrong, for I have never known C. pratensis fl. pl. to set seed. It increases vegetatively, however, portions of leaf or stalk rooting in moist soil and soon forming a new plant.

There is something peculiarly attractive about the milk-white flowers of C. trifolia when, in the earliest days of spring, they appear above their dull and dark-green mat of trefoil leaves. C. macrophylla also is a rather attractive member of a race that is not endowed with great garden value. But I like the large, fresh, green, sappy foliage of this robust species when growing among the bigger plants of the waterside, and its rosy-purple blooms will not escape admiration, especially as they come before most of its companions are in flower. *J.*

NOTES FROM KEW.

The very warm, sunny and dry weather experienced during September has resulted in the fruits of many trees and shrubs having high colour. In particular the large-leaved Whitebeam, Pyrus Aria var. majestica, is carrying heavy crops of rich red fruits. So also are P. pinnatifida, P. rotundifolia. P. intermedia and P. torminalis with shining brown fruits. Interesting and showy, too, are the fruits of Pyrus alnifolia, P. americana var. nana, P. Zahlbruchneri and the dainty P. foliolosa (syn. Vilmorini) with elegant pinnate leaves and clusters of pale rosy-red fruits getting lighter, almost white, before they are fully ripe.

The wild hedge-row Thorns are unusually attractive this year, carrying heavy crops of fruits and brightening up many country roads. With their larger fruits the North American Crataegus have been considerably planted in British gardens thanks in no uncertain measure to Professor Sargent of the Arnold Arboretum. Six of the best of these Thorns at the time of writing are C. Downingii, C. prunifolia, C. Crus-galli, C. mollis, C. coccinea and C. succulenta. Most beautiful of all, however, at the time of writing, both in foliage and fruit is the Oriental Thorn, C. orientalis, with large, coral-red fruits, and the variety sanguinea, with rich, dark crimson or purplish-red fruits.

Very prominent among the Cotoneasters is C. Dielsiana, of which C. applanata is a synonym. Quantities of rich, glowing red fruits are borne on large bushes, six feet in height. It is a deciduous Chinese species.

The warm, sunny weather of recent weeks has favoured the ripening of the growths and flowering of two species of Caryopteris. C. Mastacanthus and C. tanguticus. The latter was the first to commence opening the lavender-blue flowers at quite the end of August, C. Mastacanthus, with blossoms a shade paler, being some two or three weeks later, though as the flowering season lasts for about six weeks, both are in flower together. C. tanguticus is a native of West Kansu, China, and was introduced by the late Mr. Reginald Farrer, in 1915. The leaves are smaller than those of C. Mastacanthus, which was first introduced from China in 1844. Both are useful autumn-flowering shrubs for sunny borders. In cold districts these Caryopteris should be planted in well-drained, light soils at the foot of a sunny south wall. Even if the ends of the shoots are killed, or the whole growths cut to the ground, the Caryopteris form woody stools from which young shoots push up freely in spring.

Another family of shrubs, or small trees, which flower best during warm, sunny autumns, are the Clerodendrons. These are also natives of China. C. trichotomum is a large bush or small tree with ample, ovate or oval leaves, and cymes of fragrant white blossoms in August and September, followed by blue-black fruits, the size of Peas, nestling in the large, persistent, reddish calyces. C. Fargesii, a native of Szechuen, is named in compliment to Pére Farges who first sent seeds to France in 1898. It is readily distinguished from C. trichotomum at the present date by the beautiful, turquoise-blue fruits.

The third species, Clerodendron foetidum, can only be described as a sub-shrub, as least at Kew, the stems dying back in winter. The woody stools send up vigorous growths from three feet to five or six feet high, most of them terminating during August and September in large, rounded corymbs of purple-red blossoms. The flowers are fragrant. The specific name "foetidum," refers to the odour of the leaves when bruised. It was first introduced by Fortune from China in 1844. At the recent Holland Park Show splendid cut sprays exhibited by Mr. Gerald W. Loder were given an Award of Merit.

The Japanese Hydrangea paniculata is the best hardy species and a very valuable September flowering shrub. The variety grandiflora is better known, being cultivated extensively in pots for greenhouse decoration, but the species is more valuable in the pleasure grounds, and shrubbery borders, because it flowers a month later. By hard pruning in February and thinning the young growths some two months later, the bushes produce eight to a dozen large panicles of white blossoms.

The woolly-leaved Pepper-bush, Clethra tomentosa, is a useful September-flowering shrub, producing the racemes of fragrant white blossoms three weeks or a month later than the better-known Clethra alnifolia. It is a deciduous shrub spreading by means of sucker growths into large clumps, and growing five feet to six feet, or more, in height.

Plants of Ceanothus at Kew, when given a mulch of old decayed manure, continue to produce a succession of very showy blossoms. Among those with blue flowers nothing surpasses in vigour of growth and freedom of flowering the beautiful Gloire de Versailles. The best pink-flowered variety is Perle Rose, producing many attractive sprays of dainty blossoms.

Zephranthes candida, an autumn-flowering bulbous plant, is extensively planted at Kew as a permanent evergreen edging to a number of borders. It was at first tried for borders facing south, where it was very successful, but this year the best show of flowers is provided where it is planted as an edging to a west border with a high wall, and then in addition, the Zephyranthes are considerably shaded by the growths of the climbing Roses on a long pergola. Planted in the soil on the edge of the border which is unusually well-drained by the gravel walks, the Peruvian Swamp Lily, or Flower of the West Wind, grows and flowers freely. It forms an evergreen edging six inches to eight inches in height and produces white, Crocus-like blossoms freely in autumn.

The green-leaved form of Liriope (Ophiopogon) spicata is a very good autumn-flowering plant to group along the front of warm shrubbery borders. Growing about one foot high, it has narrow, strap-like, arching, green leaves, between which push up freely slender, compact spikes of lilac-blue blossoms. The plants thrive in ordinary, well-drained ground, and are readily increased by division in spring.

Among the species of Clematis nothing surpasses in value the masses of C. flammula. The delightfully-scented flowers suggest a Vanilla fragrance. The white blossoms last for a couple of months in beauty, and the plant is especially effective for clothing arbours and porches.

The hardy Plumbagos, Ceratostigma Willmottiae and C. plumbaginoides (Plumbago Larpentae) are showy plants for warm, well-drained, sunny borders. The distinct blue flowers are freely borne from August to October. C. plumbaginoides forms spreading masses one foot high, and C. Willmottiae grows up to three feet or more high, in warm districts. *A. O.*

GARDEN NOTES FROM SOUTH-WEST SCOTLAND.

In a recent note I may have incurred censure from advanced horticulturists by writing disparagingly of colour schemes in the herbaceous border; but in such a random jumble as results from an endeavour to have something in flower in every season, it is certainly advisable to note, not only the plants whereof the colours clash with each other unpleasantly, but also those which provide agreeable combination. In the present mid-September the soft lavender of Aster acris reacts well as complimentary to the clear yellow of the Chilian Calceolaria integrifolia. Although the latter passes here, unhurt through most winters, it is well to keep a reserve from cuttings. Last winter our old plants were all cut down to the ground by frost following upon wet, and require a year to recover.

A large round bed, encircled with a broad inner band of Scilla siberica within an outer band of Narcissus minor, gives a rich effect in March. The centre of that bed is filled with Dierama (Sparaxis) pulcherrimum of all shades from maroon-crimson to delicate pink and white. Their six-foot wands are now heavily bowed with seed. Chionodoxa Luciliae and C. sardensis gain much by contrast with the lemon-yellow sprays of Saxifraga apiculata; and the graceful Narcissus Queen of Spain, a natural hybrid from the mountains of Portugal, never displays her charms to greater advantage than when rising from a breadth of Aubrietia deltoidea, provided always that the latter is not one of the varieties sullied by the infusion of a ruddy tinge.

Muscari comosum, familiarly known as Heavenly Blue, makes a rich carpet for Rhododendron ciliatum; the violet-blue and russet spires of Salvia virgata provide a fine offset to the delicate tint—between fawn and apricot—of Lilium testaceum. A gorgeous feast of colour may be had by planting the flaming Hippeastrum (Habranthus) pratense among Iris chrysographes or beside Cynoglossum nervosum; the latter being of a far brighter blue than Lindelofia longifolia (spectabilis) which is more frequently planted and does not deserve it.

I wonder why the Japanese Houttuynia cordata has been left out of the latest edition of the Kew *Hand List*. It was included in the 1902 edition, together with its American relative H. californica. I do not know the latter; but H. cordata is a pretty thing when set with bloom in late summer, and is seldom met with in private gardens. It is one of only two or three Piperaceae which are hardy in this country and, like the rest of the Pepper Order, the flowers are minute and without a perianth, but are furnished with conspicuous yellow stamens and crowded into a dense erect spike about an inch high. Four gleaming white bracts at the base of the spike complete a very attractive inflorescence, showing to advantage among the broadly cordate leaves which are deep green and bronze-coloured. The whole plant is but a foot high, and is usually described as a bog plant, but it thrives vigorously in ordinary garden soil. Here, at least, it does so at the foot of a brick wall on which is trained Billardiera longiflora, now thickly set with its beautiful purple berries. This is about the last kind of place one could assign to a bog plant; but many things that come under that designation where the air is dry, appreciate a somewhat friable foothold in the humid atmosphere of the west coast. Some of the American Swamp Lilies afford a case in point. *Herbert Maxwell, Monreith.*

CASTLEFORD, MONMOUTHSHIRE.

The gardens at Castleford, near Chepstow, the residence of W. R. Lysaght, Esq., are famous for their extensive rock garden, which is built into the naturally rocky landscape of well weather-worn stone. It would be difficult to find a site more admirably suited to the construction of a rock garden or for the cultivation of alpines.

I found the gardener, Mr. Briscoe, busy among the alpines. The plants in the rock-bed pockets and pool are all equally well cultivated, and every plant is understood and placed in the position which suits it best.

One of the most striking features at the moment are three groups of the lavender-blue Pereskia atriplicifolia with its glaucous foliage. These plants stand well over three feet high and are making a wonderful show of colour. I was surprised to see them growing to this size, and on making enquiries, was informed that the secret was in the fact that they are planted between two huge boulders, which give both drainage and warmth to the plants.

The glorious and ever popular Ceanothus Gloire de Versailles is helping in the display of lavender-blue some twenty yards away.

The red-flowered Zauchneria californica is quite hardy here and is at present in full flower in several places on the rock garden. Z. mexicana is not yet in flower

I was attracted by a brilliant bed of scarlet and on close inspection found it to be a combined effort on the part of Verbena chamaedrifolia and one of the dwarf forms of Phlox Drummondii. These two flowers were exactly the same shade of scarlet.

Close to these, in full flower, was the brilliant blue Pimpernel, Anagallis linifolia var. Monellii. The true blue colour and profusion of the flowers makes this plant worthy of any gardener's attention. It is not quite hardy, but is easily wintered in a cold frame, and is propagated readily from cuttings.

By the side of one of the Lily pools in the perennial Mimulus bartonense, the soft rose-coloured flowers of which were a pleasing change to those of the usual yellow Mimulus. Here also is the double, rose-coloured Saponaria officinalis.

Among other plants which attracted my attention were the brilliant orange Gazania splendens, Thalictrum dipterocarpum, and the charming dwarf, deep blue Campanula Zoysii. This last plant is worthy of more attention in rock gardens. On leaving, I noticed a shrub of Mandevilla suaveolens in full flower. The plant is most graceful and its beautiful white flowers are very sweetly scented. Mr. Briscoe informs me that this also is hardy at Castleford. *A. Donald Blaxill.*

BULB GARDEN.

ALLIUM TRIQUETRUM.

If not among the choicest of the Alliums, this species has a distinctive charm, and it is one well worth including in the autumn bulb order. I saw it in the south of France last March where it was growing in quantity among plantations of Arundo Donax grown there for basket-making.

A. triquetrum, which is said to be also a native of Cornwall, is distinguished by its three-sided, fleshy stems which, rising to some eight inches, bear a head of drooping, pure white, Hyacinth-like flowers with pale green lines. The whiteness of these blooms contrasts well with the strong tufts of glossy, deep green leaves, and render the plant the more effective for the partly shaded places in which it delights to grow.

Any fairly cool, good loam will suit this Allium, and it appears to be quite hardy planted about five inches deep. In this country it generally flowers in May or June.

A. triquetrum is a popular vegetable in parts of northern Africa and southern Europe. *A. T. J.*

CANTUAS.

Few shrubs, if any at all, can rival Cantua buxifolia when in flower from March to May. It combines a most graceful habit with large and vividly-coloured flowers, and when in its best it is certainly the most conspicuous plant in the garden.

It is a shrub from three feet to six feet high with slender, virgate, elegantly arched stems and branches, pubescent in all the young parts. The leaves are but small and variable in outline, either entire or lobed; but when the shrub is out of flower and at rest towards the end of the summer, many of its leaves drop, and the plant assumes a rather unsightly appearance until the new growth begins in autumn.

The flowers are produced profusely at the ends of the slender branches and hang down gracefully, three to eight in a raceme. The flower tube, three inches to four inches long, is carmine-red, with a yellowish tint along the veins; the limb is of a campanulate shape and of a most pleasing carmine.

C. buxifolia (Fig. 125) is a native of Peru, where it is called Cantu or Cantua, which means "magic tree." It is a favourite of the Indians who decorate their dwellings with it on feast days. It is of easy culture, delights in a sunny position and a rather light soil. During the summer rest the soil must not be allowed to dry up too much, and should be watered occasionally.

Although each flower produces a pod and numerous seeds, I never found these to germinate and for propagation one has to rely on cuttings. These strike easily in sand or sandy soil under a bell-glass.

Possibly the flowers are self-sterile, and as all the plants in our gardens have been raised asexually they cannot produce perfect seeds. In their native home these flowers are evidently visited and pollenated by humming birds. It would seem advisable to reintroduce some native seeds, and most likely the seedlings therefrom, as well as our old stock of plants, will then produce perfect seeds. There may be also an opportunity to improve the plants in this way, and I would like to recommend this to those that have an opportunity.

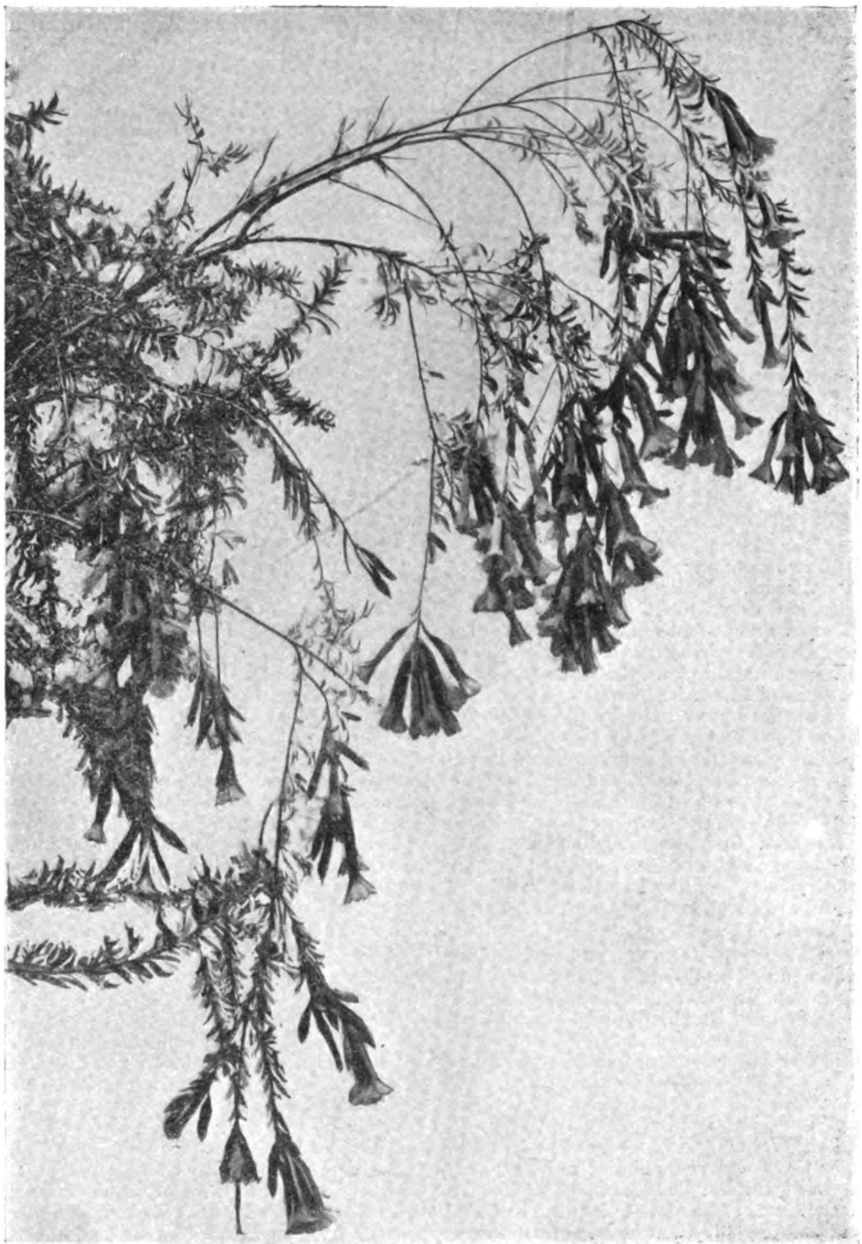

FIG. 125.—CANTUA BUXIFOLIA.

There are about seven species known, all natives of the Andes from Ecuador to Chile, at about 6,000 feet to 12,000 feet elevation. Three species have been introduced into gardens. Cantua buxifolia (or Cantua dependens) is, however, the finest. It was introduced, according to Nicholson, in 1849. As a greenhouse plant it is too straggly, and also the colouring of the flowers is not sufficiently intense. It proves fairly hardy. I have never seen it suffer to disadvantage from occasional frosts, but it is rarely a success out-of-doors in England.

Cantua bicolor, from Bolivia, is now very rare in gardens. It is a more slender shrub with smaller, but extremely elegant flowers. They have a shorter tube, but a broader, more patent limb of a deep rose colour. The late Sir Thomas Hanbury grew this plant in his famous garden at La Mortola. He told me that once he found an elderly gentleman admiring this shrub in flower. So Sir Thomas Hanbury addressed him, pointing out the rarity of the shrub. "Yes," said the stranger, "I know that, I have the plant in my own garden." "Well," answered Sir Thomas Hanbury, "my plant came from the Imperial Garden at Schoenbrunn, and there cannot be many others." "That is all right," replied the other, "I thought so, because that is my garden." He was the late Emperor Francis-Joseph of Austria.

Cantua pyrifolia, the third species, is the most vigorous, but its pale yellow flowers are of little beauty compared with those of the two former. It may be used as a stock to graft the others upon.

Cantuas may be grown against walls, pillars etc., or as solitary shrubs, where they can display their glorious flowers freely. *Alwin Berger, Geneva, N.Y.*

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"THE BRITISH HERBAL," 1743: A FORGOTTEN FRAGMENT.

ABOUT two years ago Mr. J. H. Knowles, of Messrs. Dulau and Company's scientific department, showed me the fragment of a quarto book having the running title *The British Herbal.* All attempts to determine its authorship, and the place and date of publication, failed, until Mr. Knowles chanced upon an entry in the recently-published library catalogue of Rothamsted Experimental Station, thus enabling one more semi-popular work on Botany to take its place in botanical bibliographies. The present note has been made possible by the kindly loan of a complete copy of the book in question by the librarian of Rothamsted Experimental Station.

The work has the following title, which is given in full, as the book is undoubtedly a scarce one:—

> THE RATIONAL FARMER, and Practical Husbandman. Containing, Remarks on the Principles of Vegetation, viz., Salts of all kinds, Sulphurs, Earth, Water, Air, Heat, and celestial Influences; With The Reasons and Manner of their promoting Fertility in different Soils, apply'd to Practise in the various Branches of Husbandry and Gardening. Collected from the Ancient as well as Modern Writers, with many new Discoveries, for the Improvement of Land, and the Greek and Roman Husbandry compar'd with our own. Calculated for the benefit and advantage of Gentlemen of Estates, as well as Farmers and others concern'd in Tillage and Manureing of Land. To which is added, THE BRITISH HERBAL, containing a Description of upwards of Sixty English Plants, with the Figure of each neatly Engrav'd, and an account of the Places of their Growth, the Time of Gathering them; together with their several uses and Medicinal Virtues. London. Printed and Sold by the Booksellers of London and Westminster. M,DCCXLIII. Quarto, 8¾ × 6½ inches; pp. [4], 172, 92; sign. [2 leaves], B—X$_4$, Y$_2$, B—Z$_2$, AZ$_2$.

The Rothamsted copy has as a frontispiece a picture of the Prodigal Son as a swineherd, but as this is only pasted on the fly-leaf it may be a later addition. *The Rational Farmer* (in double column) ends on p. 171; and the second page-sequence, 1–92, apparently contains all that was published of *The British Herbal.* As each half-sheet or sheet, of two, or four, leaves has "Number 1," *etc.*, in addition to the signatures, it is clear that both works were issued in parts. On p. 172 is a notice which confirms this, for we are there told that "In a few weeks will be publish'd The Rational Farmer and Practical Husbandman. Part the Second," which was to set forth the whole Art of Farriery, etc. On the same page is some interesting information about the present work: "N.B. The *Herbal* will be continued with each Number as heretofore. The Demand for the First Part of the *Rational Farmer*, &c., having been considerably larger than was at first expected, the Publishers have been obliged to reprint it, which with the Inconvenience sustain'd by the frosty Weather, when none of the Printers could work [!], and in that and the late dry Season it hath been impossible to get a sufficient Quantity of Paper to carry on the Undertaking with so much Expedition as was at first expected, because in both Seasons the Paper-Mills have been obliged to stand still for want of Water; however the Publick may be assur'd that this Work will be continued and compleated with the utmost Expedition. The Numbers also of the *American Traveller* will be continued according to the Proposal."

Judging by the Rothamsted copy, this "utmost expedition" failed to be realised, and the enterprise must have come to a sudden end, whether by continued frosts or heat-waves, or some more human causes is unknown. The first part of the *Rational Farmer* was issued in twenty-two numbers; and the *British Herbal* managed to reach Number 23. The last page of the herbal contains only a part of the description of French Mercury; moreover, it has the catch-word carefully erased, and *Finis* stamped in by hand at the base of the page! The Rothamsted copy is no doubt one of many made up from the remaining stock when the serial publication ceased.

The text of either work fails to give a clue to the author. *The Rational Farmer* is eminently rational and somewhat dull; but occasionally he rises towards the sublime, somewhat in the manner of Peter Collinson and others of his period. The following passage, even if it contain a touch of bathos, is not unlike a prediction of the theory of Evolution: "And here we cannot sufficiently admire the Wisdom of the great Creator, in this surprizing Harmony between Plants and Animals, than which we need no other Proof, that God is a God of Order. And it may be no ill Lesson of Humility to us, that as even the very Worm we tread under our Feet, can say to Man, who is so wonderfully and fearfully made, *I am thy Sister*; so likewise the basest and most noisome Weed is, as well as ourselves, a Link of that golden Chain, by which the Poets feign the World to be fasten'd to the Throne of Jupiter."

The British Herbal is interesting on account of the fact that it contains sixty-five wood-cuts of plants. In the first number, it is stated that "Gerard and Parkinson, those Voluminous Botanists, are deficient in many instances, and besides bear so excessive a Price." Following the order of Ray's *Synopsis*, 1724, but omitting the first three divisions (Fungi, Submarine Plants and Mosses), the herbal begins with Ferns, continues with such plants as Horsetails (Chara being included), Salicornia, Lupulus, Cannabis, etc. The order of the text is similar to that of the older herbals: Name, Description, Place, Time, Virtues; and the text itself does not appear to be much more than a compilation from other authors, though perhaps some of the localities are original. The wood-cuts make the fragment look much older than it really is, and I had no difficulty in identifying about half of them as inferior copies of the wood-cuts in the second edition of Gerard's *Herbal*, 1633. No doubt the rest could be easily traced to other herbals.

It would be interesting to know who was the author of this fragment, and why he abandoned his enterprise. If any copies of the numbers still exist in the original wrappers, they might give a clue to the authorship; also, if anything is known about the *American Traveller*. *S. Savage.*

PLANTS NEW OR NOTEWORTHY.

ANTHEMIS SANCTI-JOHANNIS*

DURING a visit this year to the Rodope and Rila Mountains, in Bulgaria, my friends Professor N. Stoyanoff and Mr. B. Stefanoff, of the University of Sofia, and I had the good fortune to collect excellent material of a very beautiful species of Anthemis. Careful investigation, both in the herbaria in Sofia and in those of Kew and the Natural History Museum, has confirmed our original supposition that the plant has not hitherto been described. We propose the name Anthemis sancti-johannis for the species, after St. Ivan Rilski, the patron saint of the Rila Monastery. As at the time we were the guests of the Brotherhood of Monks of this the largest monastery in Bulgaria, we trust the name may be accepted as a small compliment to their generosity and kindness.

The following extract from my diary, under the date of August 1, will indicate the nature of the habitat and of the surrounding vegetation. "About five kilometres from the Rila Monastery, amongst the woods on the lower slopes leading to the peak Elni Vrh, we crossed several shallow ravine-valleys lateral to the main valley and ridges. In one of these the trees had been cleared away many years before, apparently by an avalanche. We were above the cleared portion of the edge of the wood which was beginning to thin and dwarf, at about 1,600 m. or just over, when looking down we saw a glorious Composite of a deep, brilliant, orange colour, growing in small clusters. It proved to be an Anthemis which none of us knew. We traced it in the same valley from 1,600 m. down to 1,400 m., when the woods closed in again. Perhaps we saw two hundred plants all uniform in all characters. We could not find the species anywhere else round Rila. The woods consist chiefly of Abies alba, Picea excelsa, Pinus Peuke, P. nigra, Acer Heldreichii and A. pseudoplatanus. The plants actually associated with the Anthemis were Coronilla varia, Silene angustifolia, a Stachys of the germanica group, Linaria dalmatica, Heracleum sibiricum, Geranium macrorhizum (a favourite plant of the Bulgars), Origanum vulgare, Dianthus barbatus, Digitalis viridiflora, and species of Galium, Cytisus, Scabiosa and Alyssum. The surrounding woods are quite primitive, neither cutting nor planting being permitted in the Rila Valley."

The plant is perennial and the stems arise in small tufts up to 80 cm. or 90 cm. in height, and stand erect. The stems are unbranched or at most have only two or three branches; like the leaves, they are closely lanuginose. The basal leaves have a total length of up to 14 cm., and are two to three times pinnati-partite, the lower three-quarters of the rhachis has scattered simple or pinnate linear lobes, while the upper truly laminar portion of the leaf is oblong in general outline. The final divisions end in hard, white, acute to acuminate points, and average four to fine millimetres long, and 1.5 mm. broad. The stem leaves are very similar to the basal ones, except that they have shorter, bare portions of the main rhachis, and the uppermost are much smaller and have the pinnatifid laminar divisions right to their bases. The heads are solitary at the end of each stem or branch, which is bare of leaves for its upper 7 cm. to 16 cm. Each capitulum measures from 3 cm. to 5 cm. in diameter, with the ray florets included, and all the florets are of an intense orange colour. The phyllaries of the involucre form about three ranks, they are lanceolate, acute or obtusely acuminate at the apex, up to 8 mm., long, green, but with a conspicuous brown-black margin which is ciliately incised. The receptacle is low, hemispherical and crowned with flowers forming a disc 1.5 c.m. to 2.5 cm. in diameter. The ray florets are functionally female with an oblong or oblanceolate-oblong ligulate portion which has three or four small teeth at the rounded apex and measures 1.5 cm. by 0.6 cm. The disc florets are hermaphrodite, 6 mm. to 7 mm. long, and each is subtended by a linear-oblong membranaceous bract as long as the flower and ending in a long acumen. The achenes vary somewhat in shape, being compressed but with an indication of four sides and averaging 2 mm. by 1 mm. They are longitudinally striated and are crowned by a persistent membranaceous irregularly toothed calyx. As regards the affinity of our plant it must certainly be placed in the section *Cota*, J. Gay. The most widely spread species of this section, and one which is common in the Rila district,

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* *Anthemis* (sect. *Cota*, J. Gay) *sancti-johannis, Stoy., Steff., et Turrill. Herba* perennis, caulibus basi ramosis deinde erectis 80-90 cm. altis simplicibus vel ramis 2-3 instructis foliisque parce lanuginosis. *Folia* basalia ambitu oblonga, 14 cm. longa, 2-3-plo pinnati-partita, laciniis 4.5 mm. longis 1.5 mm. latis apice acute vel acuminate albo-incrassatis; caulina breviora. *Capitula* magna, radiata, 3-5 cm. diametro floribus omnibus intense aurantiacis; involucri phyllis lanceolatis usque ad 8 mm. longis, canescenti-araneosis, viridibus margine ciliato-incisa brunneo-atra excepta. *Receptaculum* hemisphericum floribus regularibus inclusis 1.5-2.5 cm. diametro. *Flosculi* ligulati foemini, oblongi vel oblanceolato-oblongi, apice rotundata dentibus minutis instructi, 1.5 cm. longi, 0.6 cm. lati. *Disci bracteae* lineari-oblongae, apice longe acuminatae, floribus aequilongae. *Achenia* tetragono-compressa, utrinque longitudinaliter striata, circiter 2 mm. longa, 1 mm. lata, apice calyce persistente 1 mm. longo irregulariter inciso-dentato coronata.

Bulgaria: 5 km. from the Rila Monastery, open space in woods, 1.8.26, 1400-1600 m., *Turrill* 1163 in Herb. Kew.

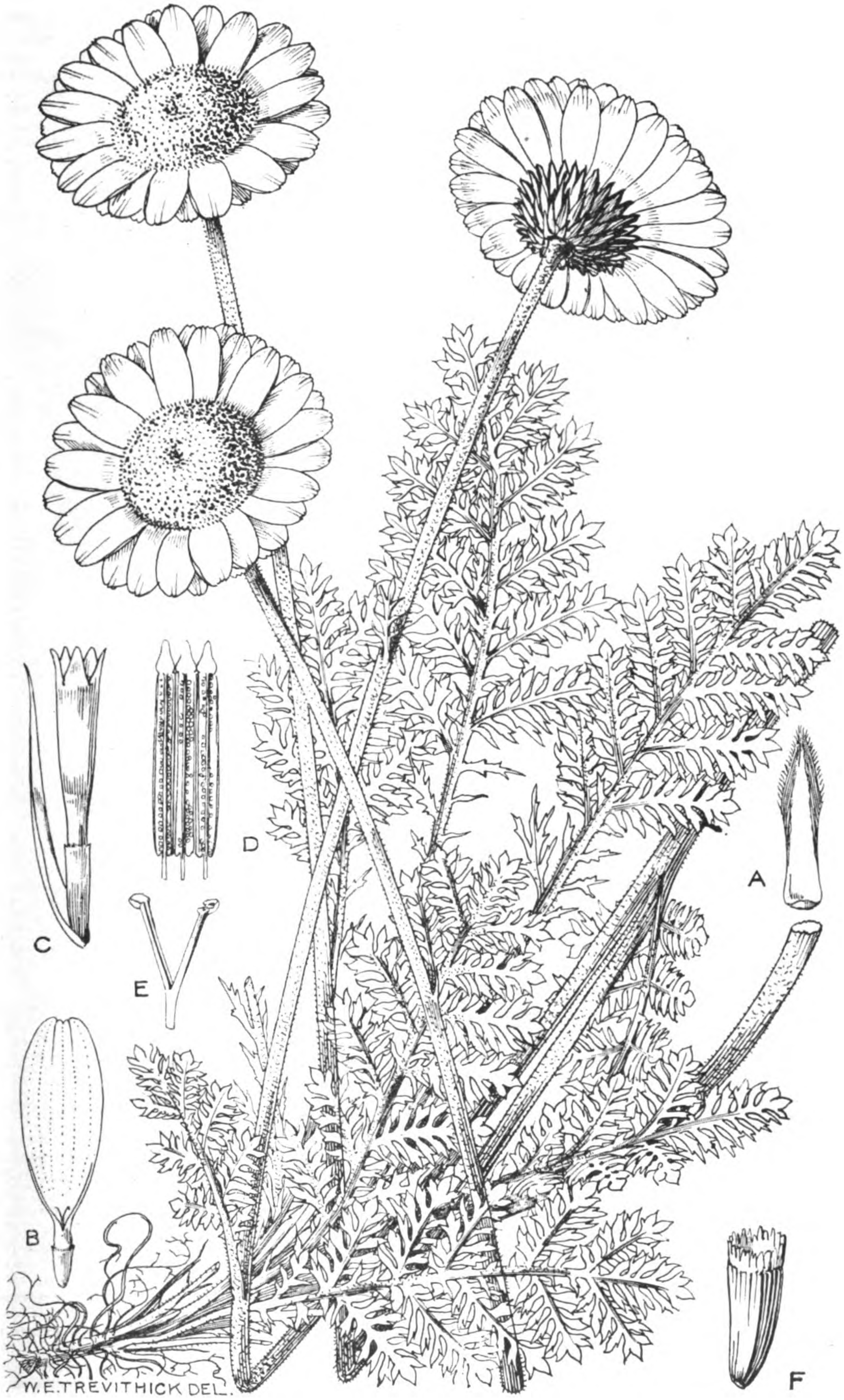

FIG. 126.—ANTHEMIS SANCTI-JOHANNIS.

A, phyllary; B, ray floret; C, disc floret and bract (palea); D, three anthers seen from the inside; E, stylar arms of disc floret; F, fruit.

is A. tinctoria, L. From this our plant is certainly specifically distinct in the size of its capitula, the shape and colour of the phyllaries, the colour of its flowers, the crowned achenes, and in the higher altitude (at Rila) of its habitat. In many morphological respects it resembles A. macrantha, Heuff., especially in the colour of the phyllaries of the involucre, but these are distinctly lanceolate in our plant. All the plants we saw growing wild were so uniform in colour that I am inclined to stress this character which has up to the present been retained in the dried specimens. Velonovsky has described a variety[*] (var. vitellina) of A. triumfetti as "flosculis vitellinis (non sulfureis)," but the capitula are discoid. Another plant described[†] by the same author has to be considered, namely A. gaudium-solis. This was collected by Stribrny in 1897 near Skobelevo at the foot of the Rodopes. Many features of the original diagnosis agree with our plant, but differences occur in the pale involucral phyllaries, the smaller lingulate florets, and in the entire corona of the achenes. Moreover, the plant came from a much lower altitude in a hotter and drier district. I have not seen a type of A. gaudium-solis, but specimens named this in several herbaria in Sofia were at most mere varieties of A. tinctoria and quite distinct from our plant. However, in the Kew Herbarium there is a sheet so determined by Bornmüller which comes nearer to our species than any other I have seen. It was collected in Mt. Jumrukcal in the Kalofer Balkan, at about 1,800 m., by Schneider and Bergmann, 9.8.1907, Nr. 752. Apparently the heads were paler in colour and the phyllaries are more obtuse than in our plant. Moreover, the receptacular bract-scales are longer than the disc florets.

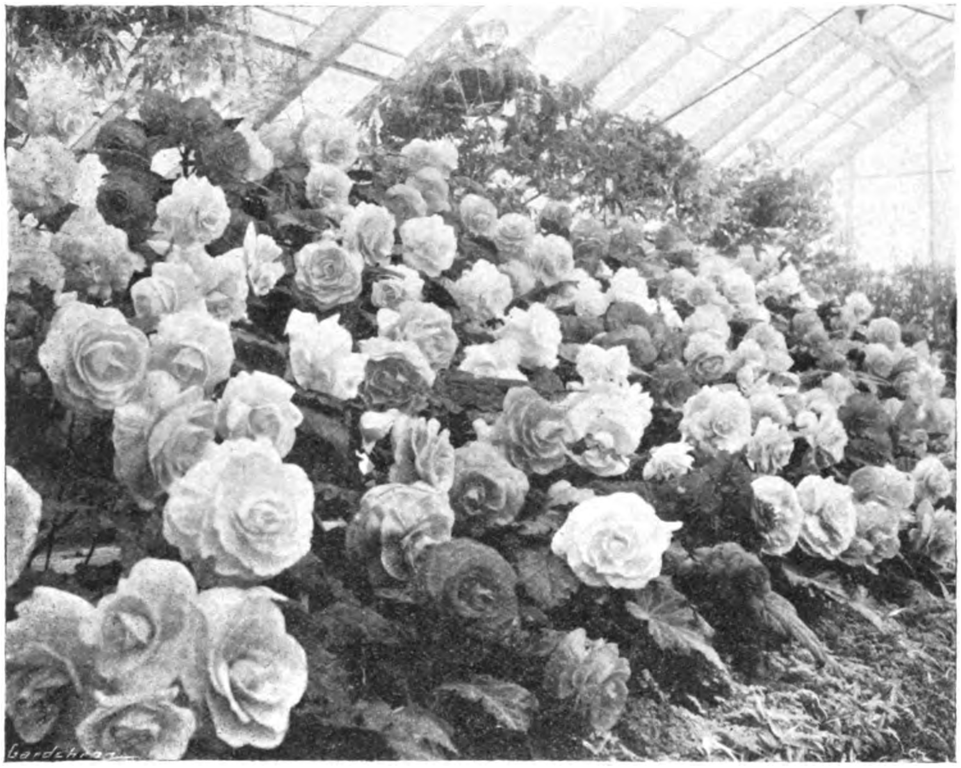
FIG. 127.—VIEW IN ONE OF THE BEGONIA HOUSES AT TWERTON HILL, BATH. (see p. 273).

It is hoped in a few years to introduce A. sancti-johannis into general cultivation in England. A living plant is now growing in the Botanic Gardens of the Faculty of Agriculture in Sofia, and fruits are at Kew for sowing in the spring. The species should prove hardy and easy to grow in this country; it is perennial, shade-loving, and certainly most striking and beautiful in its native habitat.—*W. B. Turrill, M.Sc., F.LS., Kew.*

GARDEN TOOLS AND APPLIANCES ON SALE OR RETURN.

The sending of articles on "Sale or Return" has become a regular feature with practically every firm of tool manufacturers and garden appliance makers in the country, and therefore it is to the advantage of a gardener to know what rights and liabilities the law gives and imposes upon him when he takes advantage of such an offer. Suppose, for example, a man wishes to purchase a garden syringe or a patent insect-killing sprayer, it is much more satisfactory for him to be able to inspect his purchase before he actually clinches the bargain, and since most firms offer to send such goods on approval or on sale or return, many gardeners avail themselves of their offers. To these arrangements there are, however, certain risks, such as the theft or accidental destruction of the article while it is in the possession of the intending purchaser, and in these cases the question arises, who is to bear the loss?—the firm who sent the goods or the person in whose possession they were when they were stolen or destroyed?

If the goods in question are destroyed or lost owing to some negligence on the part of the person to whom they have been sent for inspection, then, of course, he will be liable to the seller for the price, and in the same way if any special agreement is made casting upon him the responsibility for their loss he will have to abide by that agreement, but when the loss or destruction is accidental and no agreement has been made as to who shall bear the loss the Sale of Goods Act, 1893, provides certain rules for determining the liability of the parties.

Where goods, however, have been accidentally lost or destroyed while out on approval or on sale or return, or similar terms, it is necessary to find out in whom the "property" in those goods was vested at the time of their destruction, for, with the passing of the property, the risk of destruction passes also, and the person in whom the property is vested will have to bear the loss. Thus it will be seen that to have property in the goods is briefly to have the true ownership of them.

The Sale of Goods Act, therefore, provides that unless a different intention is expressed by the parties, when goods are delivered on sale or return or on approval, or on similar terms, the property in such goods, and with it the risk of any accidental loss, passes from the seller to the buyer, in the first place when the buyer signifies his approval or acceptance of the goods to the seller. The signifying of the buyer's approval needs little explanation, and usually takes place when any unwanted articles are sent back, the buyer at the same time implying that he has decided to purchase those retained by him.

The second method by which property will pass to the buyer is the commission by him of an "act adopting the transaction." By this is meant that he has done something in respect of the goods which in the ordinary way one would only expect an absolute owner to do; he may have taken them to a local shop-keeper for some slight alteration, or used them in his work, whatever it is if it shows that he treated himself as owner he will have to pay for them. What an act adopting any particular transaction is will have to be decided on the particular circumstances of that case.

In the third place, property passes if the buyer does not signify his approval or acceptance of the goods, but keeps them without giving notice of rejection to the seller; firstly, if a time limit for their return was mentioned when the goods were delivered, then on the expiration of that time limit, or if no time was mentioned then on the expiration of a reasonable time.

It is usual, of course, for the selling firm to name a fixed time within which their goods must be returned if they are found unsuitable by the prospective buyer, and if they are accidentally destroyed after the expiration of that time the buyer will have to pay for them, while if the loss occurs before that date, and the buyer has not made himself liable by acceptance or adoption of the transaction, the seller will have to bear the loss.

Lastly, property will pass from seller to buyer after the expiration of a reasonable time, if no time for the return of the goods has been mentioned. What is a reasonable time is again a question of fact to be decided on the merits of each case, for obviously a man will take longer to decide whether he can keep one thing than he will to decide whether he will keep another. *H. A. S.*

NOTICES OF BOOKS.

Making a Will.[*]

This handy little book, containing only 108 pages, provides all the information necessary for the making of a simple Will in proper legal form. The author strongly advises legal assistance in any case where complications are likely to arise, remarking that "the trouble and expense arising from a badly drawn Will are so utterly out of proportion to the saving of expense in the first instance that . . . the intending testator will be well advised not to grudge the lawyer his modest fee." However, where all is clear and simple, this little volume would enable anyone who followed the directions given to make his own Will without difficulty.

A point of interest to gardeners is the distinction made by the law relating to property, between trees in an ordinary garden and trees which are part of the stock of a nurseryman. In the former case—where the trees and growing crops are not expected to repay their primal cost in one year, and are considered part of the land—they are classed as real property, while, by inference, the trees of the nursery grower would be regarded as personal property.

The author lays stress on a fact which is often lost sight of by a testator acting without legal advice, *i.e.*, that a Will is invalid unless the two witnesses sign the Will in the presence of the testator and also of each other. Frequently the two signatures are obtained at different times thus making the whole Will invalid. Another point sometimes lost sight of is the necessity of obtaining entirely fresh signatures to a Will which has been revoked, and which it is desired to restore. It is not sufficient to destroy the revocation; this would simply leave the maker of the original Will intestate.

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[*] In *Sitz. k. böhm, Gesellsch*, Wissensch. Prag, 1902.

[†] In *Flor. Bulg. Suppl.*, 152 (1898).

[*] *The Law of Wills for Testators; or, How to Make a Will.* By G. F. Emery, LL.M. London. Effingham Wilson, 16 . Copthall Avenue, E.C. 2. Price 2/-

A point of importance to a testator owning any kind of business is that executors of a Will cannot carry on the business after the testator's death unless they are specifically given authority to do so; and such authority, which may have a very definite effect, should be drawn up with the utmost care. The Public Trustee does not carry on business except temporarily, for the purpose of a sale, or of winding up.

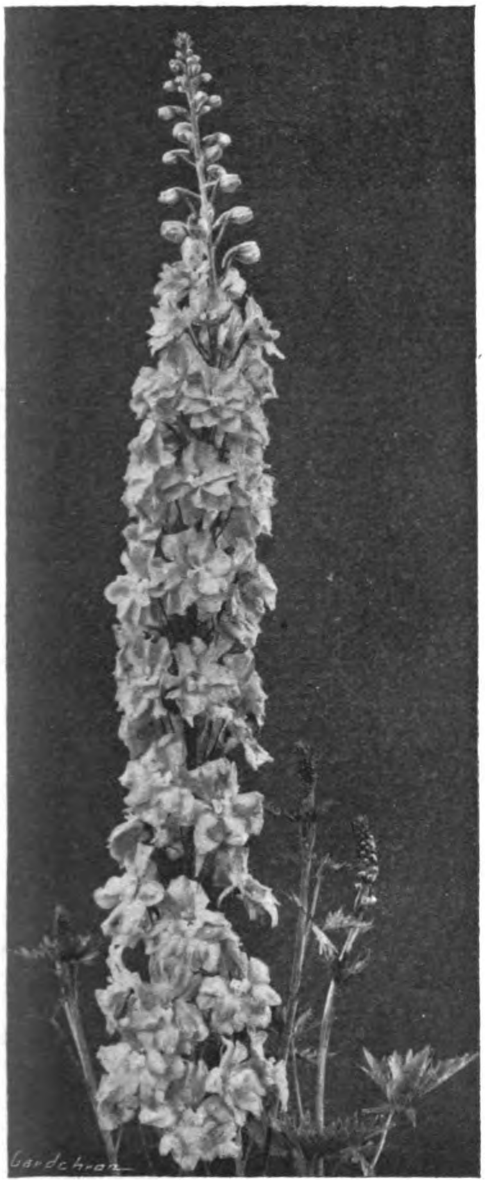

FIG. 128 —DELPHINIUM' HOWARD H. CRANE.

The author alludes, in connection with the subject of land left by Will for charitable purposes to the provisions of the Mortmain, etc., Act of 1891, which lays it down that not more than twenty acres of land can be devised for the purpose of a public park. In the event, therefore, of a land-owner desiring to benefit a town in this way, it is better to make over the land during his lifetime. Incidentally, it may not be generally known that a legacy for the purpose of keeping up a grave in a cemetery is absolutely void, and could not be carried out, as, in law, the gift is regarded as being for a superstitious use.

NURSERY NOTES.

MESSRS. BLACKMORE AND LANGDON.

On the slopes of one of the little hills that encircle Bath, Messrs. Blackmore and Langdon have established a nursery of modest size, but world-wide reputation. Many years have elapsed since Mr. Langdon, already recognised as a Begonia expert, joined forces with Mr. Blackmore, a Carnation enthusiast. They experienced the usual difficulties that attend the establishment of a business with limitations of capital, but the partners persisted in supplying their clients with good plants and continued the work of raising new and improved varieties. Success followed, and although Carnations were not continued as a special feature, greater attention was paid to the tuberous-rooted Begonias, until the firm now holds an unsurpassed reputation for these flowers. As the years passed, Delphiniums, Cyclamen and Gloxinias were "taken up" with the same quiet persistence and with similar results. Other subjects are grown, including Chrysanthemums and Carnations, chiefly for cut flowers and for the purpose of maintaining the staff throughout the year. The picturesque nursery, commanding fine views over Bath, is only about ten-and-a-half acres in extent, but as Messrs. Blackmore and Langdon have been "faithful in a few things," they have obtained the reward due to the concentration of skill and enterprise.

Horticulturists who have been amazed at the wonderful Begonias the Bath firm has exhibited at Chelsea and other great shows, would be even more surprised if they saw the large houses (Fig. 127) at Twerton Hill filled with superb plants carrying wonderful flowers. Messrs. Blackmore and Langdon are first-class cultivators as well as the foremost raisers of Begonias. Each year they raise and plant out about 150,000 seedling Begonias, and each year the quality of the strain is improved. The bulk of the resulting tubers are sold for bedding purposes and colour selections for pot culture. Several thousand seedlings are selected for cultivation a second year; from these about 350 are chosen for further test, and eventually not more than a dozen or a score of these are considered worthy of a special name. And so, year by year, careful hand pollenation continues, followed by sowing, pricking off and planting out the seedlings; then comes selection and re-selection until, if fortune smiles, twenty varieties may find a place among the élite, with varietal names to differentiate them.

In recent years the pendulous Begonias, suitable for hanging baskets, have grown in popular favour as a result of Messrs. Blackmore and Langdon's work, and a few of the finest varieties of this section as seen at Twerton Hill, are Meteor, scarlet; Eunice, pink, flushed peach; Coralina, soft coral red; Rose Cactus, rose-pink, of pretty form, Lettie, rosy crimson and particularly graceful; Sirius, rich red, with twisted petals; and Gladys, deep red.

A selection from the large-flowered, named varieties we saw in flower include the following: Hilda Langdon, soft pink, with very broad petals; Peace, cream-coloured, a lovely variety; Albatross, white, a wonderful flower of exquisite form; Lady Ann, shell pink, of vigorous growth and sturdy habit; Lord Lambourne, deep salmon-orange, a variety that has attracted a great deal of favourable comment at numerous exhibitions; James Braid, crimson, a grand flower; Rayon d'Or, rich yellow with apricot tinting, with frilled margins to the petals; Mabel Langdon, salmon-rose, one of the finest; Mrs. C. F. Langdon, rich orange, a splendid Begonia; Queen of the Belgians, deep pink, bearing numerous large, shapely blooms; Edith Barber, ivory-white with cream shading; Mona, the last word in white exhibition Begonias; Golden Glow, brilliant golden yellow, of fine shape; Stanley Ome, yellow; Charles E. Pearson, vivid orange; F. C. Calthorpe, rich orange-scarlet; Sidney Robinson, orange, a grand grower; Sir J. Reid, orange; Lucy V. Toner, deep old rose, very attractive; and Chrystabel Spry, pale pink, very dainty. There are others almost, if not quite so good as those named, but a severe limit must be placed on our selection; all those indicated are grand subjects for conservatory decoration, robust, and bearing large flowers of beautiful shape.

A few conspicuously and deeply-frilled, varieties that arrested our attention were Mrs. Hugh Moncrieff, pink; Mrs. W. Cuthbertson, soft pink; Mrs. Macnamara, carmine, of Water-Lily form; Lady Tweedmouth, rose-pink, and deservedly popular; and Cissie Cuthbert, clear pink with deeper pink edge.

Messrs Blackmore and Langdon have now several startling varieties of deeply-frilled, single Begonias, with the frill of a different colour to the rest of the flower, for instance, an orange flower may have a yellow frill. These have been so much admired recently that the available stock has been sold already.

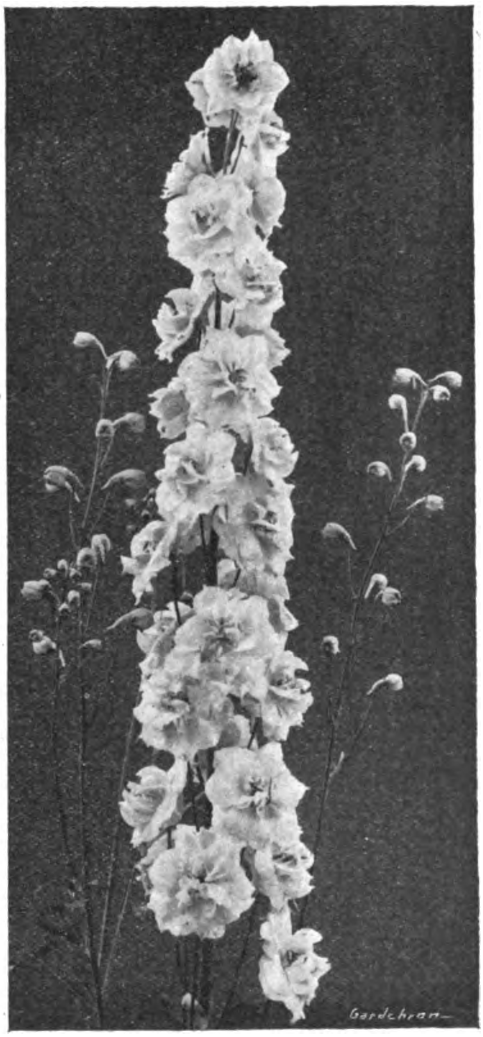

FIG. 129.—DELPHINIUM MRS. FOSTER CUNLIFFE.

It is a far cry from Begonias to Delphiniums, but the latter are, in their way, quite as fine as the former at Twerton Hill, and because of their hardiness and stateliness make an even stronger appeal to the general public. Here, again, the work of raising is carried out on a large scale, and severe tests and comparisons are made ere a variety is distributed under name.

A selection of fine varieties is more difficult in the case of Delphiniums than Begonias; the few named below are all well tested, vigorous varieties, but as they are not all at their best at one time, the numerals attached will indicate the order of flowering; the periods, however, overlap in almost every instance. Howard H. Crane (Fig. 128), new and novel, the outer segments of the rounded flowers being deep blue, the inner ones mauve and the centre white, 5½ feet; Mrs. Foster Cunliffe (Fig. 129), double flowered, a lovely shade of mauve, tinted with blue; this is the forerunner of many mauve varieties in which the petaloid stamens are large and laid out evenly in the centre of the flower; Lord Derby (2), deep rosy mauve, with white centre, 4½ feet; Blue Boy (2), deep blue, 6 feet; Edward Bromet (2), a greatly improved Rev. E. Lascelles, purplish blue with large white centre, 5 feet; Queen of Bath (2), very deep blue, dark centre, 3½ feet; J. Pitts (2), semi-double, soft blue with lemon centre, 5 feet; Capt. Drury Lowe (2), mauve, 3½ feet; Blue Queen (2), single, sky-blue with brown centre, 4½ feet; The Alake (2), deep purple-blue, very large flower, 5 feet; Sir Douglas Haig (3), one of the best of the dark purple-blues, 5½ feet; Doris (3), mauve, shaded pale blue, 4½ feet; Lady Beatrix Stanley (2), rich blue with white centre, 4½ feet; Constance (1), gentian-blue, white centre, 4 feet; and Millicent Blackmore (3), blue and mauve, dark centre, flower of large size and rounded form, 5½ feet, were varieties that may be regarded as a safe selection from a host of good things.

Other sorts we noted for some special excellence of habit, flower, or colour were Mrs. Colin McIver (2), heliotrope, 3½ feet; Mrs. A. J. Watson (2), deep mauve, dark centre, producing a long, columnar spike, 6½ feet; Mrs. Shirley (3), dainty, lilac-mauve with cream centre, 5½ feet; and Fairy Queen (1), pale blue, dark centre, very effective, 5 feet. Several of the older sorts, notably Lizzie Van Veen, Willy O'Brien, Yvette Guilbert, Queen Wilhelmina, Rev. E. Lascelles, Lamartine and Persimmon are still grown to meet the popular demand, but they are now excelled by newer varieties.

Messrs. Blackmore and Langdon have a new race of semi-double, round, regular-flowered Delphiniums of superb habit and of exquisitely-beautiful, soft silvery-mauve shades; several of these have been named provisionally but they are not yet on the market. Progress in the direction of white and cream-coloured varieties is also very marked among the newer seedlings, and several of these have been chosen for special trial.

Several houses are filled with a fine strain of Cyclamen at Twerton Hill, and the plants were just ripening their seeds on the occasion of our visit at the end of June. Gloxinias provide another interesting feature, while out-of-doors there were 15,000 Phloxes, hosts of Lupins and Pyrethrums, a fine strain of Pansies, a great breadth of carefully selected Polyanthuses, equally good blue Primroses, Pyrethrums and stocks of the most useful herbaceous plants suitable for the production of flowers for cutting. Everything looks happy and well cared for at Twerton Hill.

Mr. Langdon continues the general management of the business and makes the Begonias his peculiar care. He is now assisted by his son, while a son of the late Mr. Blackmore takes charge of the clerical work.

FLORISTS' FLOWERS.

SWEET PEA AVALANCHE.

There has been a long succession of waved white Sweet Pea varieties, but the fact that Nora Unwin of the Unwin semi-waved type—not a "Spencer"—has so long held the field as a market variety shows that anything approaching an ideal white "Spencer" has been long in materialising. The writer has this year given a trial to Avalanche, growing it not as for exhibition but, under something rather better than field conditions, for garden decoration and cut flowers. The blossoms, even under this treatment, are of exquisite form and well-placed on a long, stout stalk; the colour, as bunched, is very pure, though the slightest tinge of green is noticeable on close inspection, and the stock is, apparently, perfectly fixed and true to type.

Growing alongside the robust and beautiful cream-pink Doris Usher, Avalanche bears comparison well as regards habit of growth, size of flower and length and stoutness of stem. As regards the form of the individual blossoms and their arrangement on the stalk, the new white has decidedly the advantage, but I think Doris Usher is a trifle more substantial in petal. I am not quite sure even as to this, as body-colour has a lot to do with apparent substance. At any rate, Avalanche is much the best white variety I have grown or seen growing, and very happily named, for its cold whiteness with just a suspicion of greenness does remind one of the mountain snows. If there is anywhere a better white in commerce it must be very good indeed. I was sorry to see that the presence of a colour-rogue prevented it from receiving an otherwise well-merited award in the National Sweet Pea Society's trials. *R. V. G. W.*

DWARF CHRYSANTHEMUMS.

Various expedients are resorted to to keep Chrysanthemum plants as dwarf as possible. The drastic cutting back of the shoots during May, which is often practised, is not to be commended as it entails a serious check to growth. An expert grower may produce fine exhibition blooms when following this system, but it is probable that if the plants had been allowed to grow naturally or in the case of the slower-growing varieties such as Mrs. G. Drabble, W. Rigby, Grace Adlam, Majestic and Queen Mary, no further stopping had been practised than the removal of their points during April, the results would have been even better. There are many Japanese Chrysanthemums which are naturally dwarf, and every effort should be made to limit the collection, so far as possible, to plants of this habit of growth.

Some of these dwarf varieties are in no way inferior to the taller growers and are in every respect satisfactory. Mrs. Peter Murray is a purple-coloured variety of fair size. Mrs. Algernon Davis and its splendid sports, Mrs. B. Carpenter and Julia, are dwarf varieties which produce as fine blooms as any other sorts; Rosamund, Dawn of Day, Majestic, A. F. Tofield, Sir E. Letchworth, Miss M. V. Lauriston, Amy A. Purcell, Mrs. A. E. Tickle, Mrs. R. Luxford, Edith Cavell, Yellow Edith Cavell, Wm. Turner, Mrs. Tysoe and Pink Turner are others which are capable of producing monster blooms. These varieties provide a good range of colour.

The last six varieties mentioned are splendid when grown as bush specimens. For this purpose they may be allowed to make a natural break, and the crop subsequently limited to about a dozen blooms.

Other good decorative kinds of dwarf habit are Gloriosa, In Memorium, Nero, Blanche Poitevine (very dwarf), Framfield Glory, Souv. de Petite Amie, also the incurved varieties H. W. Thorpe and J. W. Streeter. These are all varieties which give excellent results if disbudded.

February-rooted cuttings of many of the exhibition Japanese varieties are very useful to those who need dwarf plants. These should be potted finally in nine-inch pots and the growths limited to one bloom each. In many cases it will be necessary to secure the first bud which shows, particularly of such varieties as Princess Mary, Queen Mary and Majestic. In securing the buds the grower should be guided a little by the locality. In the midlands, buds of these latter varieties should be secured very early in August or the blooms will fail to form good centres. Mrs. R. Luxford, Julia, Mrs. Carpenter, Mrs. A. Davis and Mrs. Tickle need not be secured till quite the middle of the same month, which date is, on the whole, satisfactory for most varieties.

It is just as necessary to secure buds at the correct time for home decoration as it is for exhibition purposes. These February-rooted plants make splendid material for the front of groups composed of the taller plants, and a portion of any collection should consist of them. *Charles Hodgson, Acton, Sudbury, Suffolk.*

PUBLIC PARKS AND GARDENS.

A local committee is considering the provision of a recreation ground for Pitsea, Essex.

Brixham Urban District Council has received the sanction of the Ministry of Health to appropriate the Parkham Field for a recreation ground.

The Borough Engineer of Great Yarmouth has been requested to report upon the question of providing a recreation ground for Cobholm.

The Bristol Housing Committee has decided to ask the Sanitary Committee to undertake the lay-out of a recreation ground at Fishponds.

The Stourport Urban District Council has instructed the Housing and Parks Committee to consider the laying-out of tennis courts and a children's recreation ground at the Memorial Park.

Lord Levens and Melville has presented to Bournemouth Corporation, for the use of the public in perpetuity, a wooded glen known as Pug's Hole, some ten and-a-half acres in extent. The wood is practically the last untouched forest land of the famous Talbot Woods, formerly a favourite resort of residents and visitors, but now rapidly being developed for building purposes. The name Pug is said to be derived from a smuggler named Pug who hid his contraband goods there whilst they were awaiting disposal.

The Marine Park, South Shields, is divided into four parts, with intersecting roads running to the sea front, and was originally a Quarry, which has been filled in with town refuse and consists mostly of gravel, ashes and general sweepings—material that one would never consider in any way suitable for the growth of plants, yet from this Mr. William Bennett, the Superintendent, has made wonderful displays.

The collection of Irises is probably one of the finest in the country, consisting of all the best varieties obtainable, together with many hybrids of Mr. Bennett's own raising, and growing as well as those under more favourable conditions. Certain borders in each section of the park are entirely devoted to Irises, and the whole of the planting is so arranged that every variety or species of the kind of plant is seen growing together. Buddleias, for instance, are planted in large groups containing every obtainable species, and so on, with the various bedding plants and shrubs in each portion.

Large groups of single Hollyhocks are making a good show, also Aster Thomsonii. Violas are used extensively and planted on borders six feet wide, broad belts of three varieties filling the whole border. Dahlias are grown in beds and borders, and Antirrhinums are also a feature, Dobbie's coccinea being especially good. Incarvilleas grow and flourish wonderfully, and particular mention must be made of one plant of Polygonum Baldschuanicum which covers the side and roof of a large mess room, and has also entered the boiler house adjoining, and which at the present time is a glorious mass of bloom. Annuals are grown in masses, and a dwarf variety of Tritoma raised here is a grand sight, carrying hundreds of spikes in full bloom.

There are reserve gardens in each section where new varieties are tried before being given permanent quarters in the park proper, while various shrubs and trees are also propagated and tested.

The bandstand is placed at the foot of a hill on which the seats are placed in tiers, and round the stand itself is a rock garden containing many choice alpine plants.

Situated at the mouth of the Tyne and close up to the large shipbuilding yards, the people of South Shields are to be congratulated on their wonderful park, and also on having in charge a man who is a whole-hearted gardener. *M.*

FRUIT REGISTER.

BLACK CURRANT DAVISON'S EIGHT.

In 1913, Mr. G. Davison, who manages Col. B. Petres' fruit farms at Westwick, Norfolk, considered the production of an improved variety of Black Currant. Norfolk was then producing eighty per cent. of the Black Currants grown in England, and Mr. Davison was responsible for the management of the largest plantation in the county. The cultivation of Black Currants on the Westwick estate goes back for two hundred years, and Davisons have been responsible for the plantations on the estate for several generations. Consequently the work in hand was fully visualised. The defects in the old varieties of Black Currants were intimately known through daily acquaintance. The ideal was a Currant without the small end berries of Boskoop Giant, or the small and uneven size of the French types: the infertile flowers, owing to the stigmas growing beyond the anthers in the flowers in both varieties, causing the fruit to run off and reduce the crop. In Baldwin the weak growth, early flowering and tender leaves are defects of importance. In Victoria the tough skin of the fruit is objected to by jam boilers, and the small bunch closely set into the stalk is strongly resented by the fruit picker.

In a new variety that was considered worthy of distribution the above faults were to be eliminated. This is Davison's Eight, a naturally strong, upright grower, with sturdy leaves and growth. The short-jointed shoots produced an abundance of long bunches of flowers that set freely. Even in the adverse weather that was experienced last spring, Davison's Eight (Fig. 130) set better than any other variety and gave the heaviest crop. The fruit is of a large, even size, without the very small end berries of Boskoop Giant and the French types. The flavour of the fruit is sweeter than in the old sorts, while the thin skin is sufficiently strong to enable the fruits to travel a long distance without bursting. The long, easily-set branches of fruit facilitate rapid picking, which is a great economic asset. All these points have been proved by practical tests extending over seven years. Davison's Eight cropped at five-and-a-half tons of fruit to the acre when the best of the old varieties growing under equal conditions did not average two tons per acre, and owing to the high quality of the fruit it made £5 per ton above the price ruling in the open market for the past six years, while in four-pound chip baskets the increase has been threepence per pound.

Loudon, writing in 1824, a period of just over one hundred years ago, stated there were no varieties of Black Currants. It is doubtful whether systematic cross-pollenation preceded the production of any of the varieties hitherto in cultivation. The French types, Boskoop Giant, Victoria and Baldwin, are probably chance seedlings, and "new" varieties are frequently selections from older types.

In 1912, Mr. Davison potted up selected bushes of the four main types. These were flowered in a cold greenhouse from which all insects were excluded. Through experience with other plants Mr. Davison recognised that the last flower in a raceme usually gave the maximum mutation in the seed plants and the flower more readily accepted foreign pollen. Acting on this knowledge the end berries were used on the chosen racemes of flowers. The four main groups were crossed and recrossed and a tabulated record kept of the pollenations. When the berries were ripe the seeds were washed out and sown immediately, each berry producing about forty-five seeds. By the following March the first batch of eight thousand seedlings was ready for planting in the fields. This was followed by a similar batch from the second sowing. In looking over these seedlings it was obvious that a complete mixing of the different habits had been secured. The greater majority were merely interesting curiosities. The shape of the leaves in some of the plants varied from round, similar to those of Pelargonium, to the ribbon-like divisions of a Pteris frond.

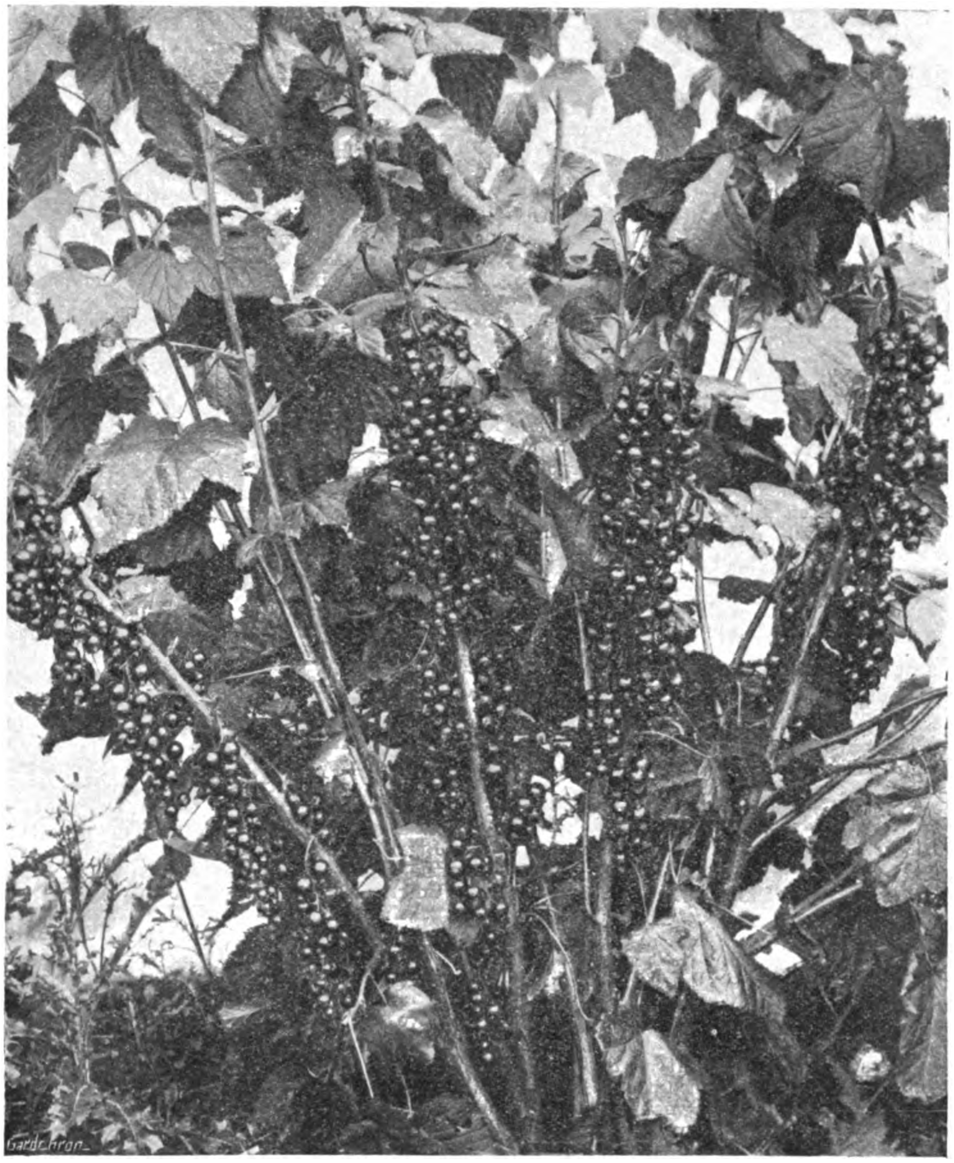

FIG. 130.—BLACK CURRANT DAVISON'S EIGHT.

A curious feature about the seedlings of Black Currants is that all the first leaves show the characteristics of "reversion." It is only after the fourth or fifth leaf is made that true venation and serration are developed. Both of these features are lost again as the plant becomes old and worn-out. This feature in Black Currant growth has led some observers to mark reversion definitely from the venation of the leaves, but experience has not proved it a definite characteristic of "reversion."

The first "bed" of seedlings comprised about eight acres and was maintained for several years in order to give the seedlings an opportunity to reveal their true character. About fifteen selections were originally made, number 8 being noticed early as a youngster of outstanding merit. Through all the subsequent trials, that now extend to many acres, grown under field conditions, it has consistently proved to be a better Currant than any existing variety, both for weight, and quality of fruit, and it has exhibited more than the normal resistance to Black Currant troubles. The Westwick Fruit Farms receive hundreds of visitors in the course of a season, and the Black Currant plantations already enjoy a world-wide reputation. In this way continual enquiries with reference to the annual behaviour of No. 8 practically decided the use of this numeral in the name of the new variety. It is the one selected as being worthy to maintain the Westwick reputation, from a trial of about 15,000 seedlings, after fourteen years' work. This work did not falter through all the war years. Even with Col. B. Petre in France most of the time, the work of producing new Currants was never forgotten.

The season of fruiting of Davison's Eight is midway between Boskoop Giant and French Black, and Mr. Goude, Horticultural Superintendent for Norfolk, considers that No. 8 will supersede both these varieties. Neither Col. Petre nor Mr. Davison claim complete immunity to either "reversion" or gall mite for this Currant, but with the new methods of treating both these troubles it has been definitely proved that absolutely clean stock can be raised, and with the use of lime-sulphur both diseases have lost their serious aspect.

Raisers of new plants seldom reap adequate reward for their work, and it is doubtful whether full remuneration can accrue to the Westwick Fruit Farms for the enormous amount of time and money that has been freely expended in this quest for an ideal Black Currant.

REMARKS ON THE CONDITION OF THE FRUIT CROPS.

(See Tables and Summaries, Ante, pp. 111-117

(*Continued from p.* 253.)

ENGLAND, S.

Kent.—Notwithstanding the large crop of Apples last year there was a good show of blossom, but constant rain during the main flowering season is probably the cause of failure, as I note that very early and very late flowering varieties are in most cases bearing. It is many years since I saw a smaller crop of Apples in this part of the country. The Cherry crop suffered severely from the wet during the flowering period, and the "die-back" caused by Monilia was very serious in some orchards, both on sweet and sour Cherries. Plums are an extraordinarily good crop—the best for many years—and it is notable that the very early flowering Cherry Plum, Prunus cerasifera, this year flowered in a fine period and has probably a record crop. Gooseberries and Currants were quite good, on the whole, but Strawberries did not come through the winter well, and the fruits were very poor in flavour. The crop of Nuts in Kent, so far as I have seen, will be considerably over the average and with Plums, is the one bright spot in the fruit grower's outlook. *Edward A. Bunyard, The Bungalow, Allington, near Maidstone.*

——Apples, everywhere, are the fewest for fifty years, and in places the crops are almost nil. The only variety that has cropped is Bismarck. Both cooking and dessert Pears are good, especially Doyenné du Comice. Plums, especially Victorias, are a marvellous crop. Gooseberries have cropped well, also Raspberries; Black Currants were fair. *Charles E. Shea, The Elms, Foots Cray.*

——The fruit crops in this part are very patchy. There was plenty of bloom on all trees, but the east winds and frosts spoilt the prospect of good crops. Pears are yielding best. Apples are very poor, except Codlin varieties. We have a moderate quantity of Plums. Cherries were very much below the average. Peaches on walls are good, while Raspberries were extra fine. Strawberries were a fair crop and of good quality. Gooseberry bushes produced heavy crops, and the berries were of excellent quality. The subsoil of the garden is wholly chalk. *J. H. Shann, Betteshanger Park Gardens, Eastry.*

——All hardy fruit trees bloomed abundantly and there was every prospect of good crops, but late frosts and cold north-east winds terminating with terrific October-like gales from the west at a later period ruined the flowers, resulting in disappointment so far as Apples, Pears and Plums are concerned. Strawberries were not very good and many of the berries were covered with mildew in the absence of bright sunshine at ripening time. Gooseberries and Red Currants were plentiful, also Black Currants in some gardens in this neighbourhood, while in others they dropped wholesale. Raspberries were a good crop, while the crop of Loganberries was a record for size and quantity. The soil varies from London clay to a pebbly loam inclined to be of a dark nature. *James Mayne, 32, Wigtown Road, Eltham, S.E.*

Middlesex.—The Apple crop is the worst I have experienced for many years. Warm weather early in the season resulted in early growth and trees at that time never looked more promising. Later we experienced cold rains, hail and frosts which completely ruined the prospects. Pears are plentiful and Peaches are a good crop. Strawberries and Gooseberries were satisfactory. We have a satisfactory crop of Plums. The crops of Black Currants and Red Currants were much below the average, also Raspberries, as many of the flowers were damaged by frosts. *Herbert Markham, Wrotham Park Gardens, Barnet.*

——Once again I have to report an unsatisfactory yield of the fruit crops in this district. The appearance of the Apple, Pear and Plum trees during the flowering period caused us to hope for abundant crops, although it was rather early. At the end of February the weather was mild and warm; on the 26th of that month Apricots were in bloom outside, Pear buds were bursting, also Apple Rev. W. Wilks. By the middle of March the weather changed completely, with cold north-east winds and dull conditions when Pear and Plum blossoms were opening. At the end of March the flowers of Pears and Plums were fully expanded, but sharp frost was registered. On the 5th of April the first Apple blossom was open on such trees as Rev. W. Wilks, Christmas Pearmain, Ribston Pippin and Bismarck. Morello Cherries on a north-east wall were also in bloom. The flowering of other Apples followed quickly, but the period was marked by very wet, cold and dull weather, in fact, Apples remained in bloom for weeks, and it was only on one day that I noticed bees working on the blossoms. The result is that many trees have only a fruit here and there. Varieties of Apples that set fairly well are Rev. W. Wilks, James Grieve, Lord Grosvenor and Washington. Some Pear trees on walls have a few fruits which I am afraid will be small and undersized. Pitmaston Duchess is one of the most satisfactory varieties. *George H. Head, Fulwell Park Gardens, Twickenham.*

——The Apple crop appears to be a very poor one; wet days and frosty nights during April and May did much damage. Pears are a very poor crop and Plums a light one. Currants and Gooseberries were very good. Raspberries were extremely good, the best we have had for some time. Strawberries were an average crop and the fruits were of very good quality where attention was given in watering. All fruit trees are making splendid growth. *James A. Paice, Sunnyfields Gardens, Mill Hill.*

Surrey.—Peaches set well on wall trees, but owing to frost, cold winds and blight most of the fruits dropped from the trees. Apples did not set well, especially late varieties, but we have a fair crop of good fruits of Keswick Codlin, Beauty of Bath, King of the Pippins and Bramley's Seedling. Pears are a heavy crop of most kinds. Plums, especially Victorias, were plentiful, but a few varieties, such as French Prune and Coe's Golden Drop are scarce. Standard Cherry trees of White Heart and Bigarreau were well fruited, but birds cleared the fruits before they ripened. Morello Cherries set well but the fruits dropped freely at the stoning period. Black Currants were spoiled by blight and only two or three fruits remained on a bunch. Red and White Currants were very plentiful also Gooseberries and Raspberries. Early varieties of Strawberries gave good fruits but we did not have many on young plants. The soil is light and sandy on a subsoil of part gravel and part iron ore. *J. T. Weston, Hatchford End Gardens, Cobham.*

——The show of fruit blossom this year was exceptional but owing to incessant rains and slight frosts Apples did not set very freely; nevertheless, several good sorts are bearing well, including Tower of Glamis and Warner's King. Young trees and cordons are also well cropped. Pears are very plentiful especially the Perry sorts, which hardly ever fail us; Plums, too, cropped very heavily and the branches needed supporting. Apricots and Morello Cherries were rather scarce. Black Currants were an exceptionally heavy crop, although Red and White Currants were only moderately plentiful. Gooseberries yielded well, also Raspberries, especially the varieties Pyne's Royal, Hey Tor, Lloyd George and Superlative. Loganberries were an abundant crop. Strawberries did fairly well but the berries were lacking in flavour. Figs, outside, set rather badly. Walnuts are a failure, but that loss is made good by an extra heavy crop of Filberts and Kentish Cobs. Our soil is very light, overlying gravel and chalk. *John H. Shipley, Haling Park Gardens, South Croydon.*

(*To be continued*).

HOME CORRESPONDENCE.

Hybrids of Gladiolus primulinus.—With regard to the proposed designation of the hybrid Primulinus strain of Gladioli by Messrs. Kelway and Son, and the two notes thereon (pp. 259 and 260), may I add that in 1905 Sir Leicester Beaufort, then Chief Justice of Northern Rhodesia, when on furlough, gave me, together with several unnamed species of Gladioli from Barotseland, about fifty corms of G. primulinus which he had obtained from Sir Francis Fox when on his way down country. I gave some of these to Kew and some to Mr. William Bull, of Ramsgate. Owing to the changing over of their season of flowering no other Gladioli were in bloom at the time they flowered in 1906, and the first crosses I made were in 1907. From these about 900 seedlings flowered from 1910 and onwards, many being very similar to those raised in America. But though beautiful, I am afraid I looked at them rather with the eye of a florist than for their decorative effect, and only ten or twelve were kept to use for further development. Two or three of these original hybrids, including Francina—the only one I thought worthy of naming—have been exhibited at the R.H.S. meetings. None of the varieties I originally crossed with G. primulinus were of Messrs. Kelway's strain, nor have I used any subsequently. While, therefore, "Langprims" might be an appropriate designation for Messrs. Kelway's strain of G. primulinus hybrids it seems to me that it would be obviously inappropriate for other strains, or for Primulinus hybrids generally. *A. J. Bliss.*

——In view of Messrs. R. Wallace and Co.'s letter on page 259 of your issue of September 25, we are making further enquiries. We had understood that Mr. Townsend was the first collector of Gladiolius primulinus, and that Sir Francis Fox handed these corms first of all to us and to Kew. Messrs. Wallace's statement points either to Mr. Townsend having sent some corms to America or to there having been a previous collector of the species. It is to be regretted that Dr. Van Fleet is deceased, but no doubt Messrs. Wallace will enquire as to whether his executor has in his possession any records showing light on these points. *Kelway and Son.*

Small Bulbs for Forcing.—The article on this subject by *A. P. C.* (p. 207) should interest all lovers of these interesting subjects. One often wonders why these small bulbs are not grown more extensively in pots and bowls for conservatory decoration during the winter and early spring considering that the majority are very cheap. In addition to those mentioned by *A. P. C.*, the following are worth growing. All are not amenable to forcing, but their season may be hastened somewhat, even if only given the protection of a cold frame. Tulipa Fosteriana is a beautiful species but the bulbs are rather expensive. T. Greigii is more reasonable in price, and if only a few bulbs are grown, this Tulip should be included. T. praestans is a gem of the race, and considering the number of flowers one stem produces, its price is not high. I have had so many as nine flowers from a single bulb. Tritonia crocata, with its orange-scarlet flowers, is one of the showiest subjects for the conservatory, and if treated as for Freesias, is easily grown. The Crocuses known as Ideal are to be specially recommended for pot culture and they give a succession of flowers over some weeks. They are a trifle more expensive than the ordinary forms of spring-flowering Crocus. Narcissus Tazetta, the Chinese Sacred Lily, may be grown in bowls, in water, with clean pebbles to hold the bulbs in position. Ixias are admirable for small pots and inexpensive: they may be obtained in various colours. Anemones, especially varieties of A. nemorosa, should be tried, if only bought in mixture. Iris tingitana, one of the most beautiful of all the bulbous-rooted Irises may be had in flower early without forcing. *Geo. Kent, Apps Court Nursery, Walton-on-Thames.*

SOCIETIES.

ABERGAVENNY AGRICULTURAL.

It has been stated that the exhibition of this Association is one of the finest one day shows in the country and certainly the horticultural section is second to none, at any rate in the west. The quality of the horticultural exhibits reached a high standard, and an old Shrewsbury judge for over twenty years stated that he had rarely seen finer Potatos, of which there were upwards of two hundred dishes. The fruit was excellent, Apples especially, in spite of the poor crop generally. In the class for a collection of twelve dishes of hardy fruits, Miss C. M. Solly-Flood was first with dishes of first rate quality. Plums and Apple Rev. W. Wilks being noteworthy. This exhibitor also gained similar honours for a collection of Apples, and also for Pears. Other exhibitors in the fruit classes were Lord Treowen, who gained premier honours for Peaches and Grapes, Major Webster, Mr. Bevan and Mr. A. P. Thomas.

There was keen competition in the vegetable section, and in the class for a collection shown by an amateur, there were thirteen entrants. Mr. A. P. Thomas excelled with excellent produce. Competition was not so good in the open class for a collection of vegetables, there being only five competitors. The Challenge Cup and £3 were won by Mr. A. Turner, Aberaman, with superb produce; he was followed very closely by Mr. Lucas Scudamore, of Pontrilas Court. Keen competition prevailed in the classes for Potatos, and the prize for the best dish in the show was awarded to Major Webster.

Onions were shown in quantity, and included excellent specimens.

It is, however, flowers that make the show, and here both trade and private growers contributed many splendid exhibits. In the class for the most artistically arranged trade group, in which pot plants, flowers, fruits and vegetables were included, the first prize, the Vaughan-Morgan Challenge Shield and Silver-gilt Medal, was awarded to Messrs. Fraser and Brown, Abergavenny; Messrs. Townsend and Son were second, and Messrs. Pitt and Co., third.

For a collection of Roses on a space ten feet by four feet, Messrs. English and Son, Gloucester, were first with a most artistic display, but their flowers were not quite so fresh as those shown by King's Acre Nurseries, Ltd., Hereford, who secured second prize.

Among the numerous trade exhibits not for competition, Messrs. I. House and Son, Bristol, had varieties of Scabiosus caucasica, and were awarded a Gold Medal. Messrs. Blackmore and Langdon, Bath, were represented by a grand lot of Delphiniums and Begonias (Gold Medal). A new exhibitor, Mr. S. G. Williams, of Abergavenny, in a first attempt, staged a very creditable lot of flowers, and his Gooseberries, Red and White Currants were noteworthy.

Other exhibitors included Mr. J. Wilson, Hereford, Mr. S. Salter and Mr. Jones, both of Llanforst, and Mr. H. Townsend.

ELGIN HORTICULTURAL.

The recent exhibition was one of the finest ever held in Elgin by the Elgin Horticultural Association, The Scottish National Sweet Pea, Rose and Carnation Society, for the first time so far north, held their biennial provincial exhibition at the same time and place. The result was that never in the history of the Elgin Horticultural Society were patrons so finely catered for, and the attendance of visitors proved this.

The class for pot plants was splendid, the Begonias, Chrysanthemums and Pelargoniums being in fine bloom. Mr. T. C. Gardiner, Palmer Cross Gardens, Elgin, led with greatly admired entries, while Mr. J. McLaren, Asylum, Elgin, and Brodie of Brodie, Brodie Castle (gr. Mr. J. Annand), were not far behind with their fine contributions.

Cut flowers were well shown, the leading prize-winners being Mr. A. E. Ross, Newmill; Mr. A. S. Dow, Darnaway; Mr. W. F. Samuel, Buckie; Mr. T. C. Gardiner, Palmers Cross, Elgin; Mr. W. G. Stronach, Keith; Mr. Robert Hepburn, South College, Elgin; and Mr. J. A. Grigor, Duff House, Banff. As usual Sweet Peas formed the principal attraction, the beauty and delicacy of the colours in which could only be produced in a far north climate. Mr. J. A. Grigor, the famous Banff expert, took pride of place with superb entries, closely followed by Mr. J. Annand, Brodie Castle; Mr. A. Smart, Lesmurdie; Mr. A. S. Dow, Darnaway; Mr. T. C. Gardiner, Palmers' Cross; and Mr. James Ferguson, Burgie House.

Owing to the frosts experienced in May, the entries in the fruit classes were somewhat curtailed. Despite these adverse conditions, the quality of the exhibits was of a high standard, and especially Apples. The leading honours went to Palmers Cross, Brodie Castle, Westfield (gr. Mr. J. Murphy), Darnaway, and Mr. T. Stuart, Forres.

Vegetables are always a conspicuous feature at Elgin, and this year proved no exception. Great interest was shown in the collections, where the competition was very keen. The finest produce was shown by Mr. James Anderson, Crowmallie; Darnaway; Brodie Castle; Mr. A. B. Ross, Newmill; Mr. James Ferguson, and Mr. W. McKenzie, Alves; and Mr. Stuart, May House.

The Upper Hall of the Municipal Buildings was devoted to the show of the Scottish National Sweet Pea, Rose and Carnation Society. It was a fine compliment to the Cathedral city, and one greatly appreciated by all interested in the cultivation of these favourite flowers. The display made was an especially fine one, and, as was remarked at the opening ceremony, rendered August 18 and 19, 1926, red-letter days in the history of the Elgin Horticultural Society, in conjunction with which the show was this year held. Nothing finer has been shown in this country this season, the quality being of the highest.

Mr. John A. Grigor, Duff House, Banff, had some remarkably fine entries; he was first for twenty-four vases of Sweet Peas, distinct, and for six vases of distinct varieties, novelties of 1926. Other successful exhibitors were Messrs. Torrance and Hopkins, nurserymen, Busby, near Glasgow; Mr. A. S. Dow, Darnaway, Castle; Mr. Charles Stuart, Moy Gardens; Forres; and Mr. John W. Annand, Brodie Castle.

Roses made a fine display, the blooms from Messrs. Adam and Craigmile, Fernilea Nurseries, Aberdeen; Mr. Robert Hepburn, South College, Elgin; Mr. W. Smith, Craigendarroch, Buckie; and Mr. Thos. Watson, Oldmeldrum, taking leading honours.

BANFF HORTICULTURAL.

The annual show of the Banffshire Horticultural Association was held in the Princess Royal Park, Banff. The exhibits were of a very high standard in quality and the competition keen. Unfortunately, for the first time for many years the weather was not propitious, but this did not deter a large attendance of visitors.

Some exceedingly well-grown pot plants were shown in this section, those from Lady Nicholson, Edna House, Banff (gr. Mr. James McLennan) being greatly admired, and worthily taking the leading places. Mr. James Munro, Lessendrum, also showed some very fine specimens. The special prize for the best plant in the show went to Lady Nicholson.

Cut flowers proved the chief attraction to visitors. Here the leading prize-winners were Mr. James Munro, Cairnfield, Buckie; Mrs. Smith-Grant, Minmore (gr. Mr. George Troup); Mr. R. Cook, Banff; Mr. A. Shand, Glass; and Mr. J. Findlay, Park, Cornhill. The best Rose bloom in the show was shown by Mr. W. Leveine, Banff. Sweet Peas were an outstanding feature, the exhibits occupying the entire side of the cut flower marquee.

For the best decorated dinner table, Lt.-Col. Sir G. W. Abercromby, Bart., of Forglen (gr. Mr. George Stuart), had a fine entry, showing exquisite taste in arrangement and good discrimination in the choice of flowers. The Silver Cup for the best twelve vases of Sweet Peas of not more than fifteen spikes was gained by Mr. James Munro, Lessandrum, the runner up being Mr. James Munro, Cairnfield, Buckie, The Silver Cup presented by Mrs. Smith-Grant of Minmore for eighteen Carnations, in not fewer than six varieties, was worthily won by Mr. Frank Anderson, Aberchirder. Mr. G. M. Cooper, Aberdeen, gained, in the amateur classes, the Silver Rose Bowl offered for six bunches of Sweet Peas.

In the fruit section prominent prize winners were Lady Nicholson, Mr. J. Findlay, Park, Cornhill; Mr. A. Craib, Banff; Mr. James Munro, Cairnfield, Buckie; Mr. John Fraser. Gellymill; and Mr. James Munro, Lessendrum.

Vegetables were shown splendidly and chief honours were won by Mr. George McLennan; Mr. James Munro, Cairnfield, Buckie; Captain W. H. Smith-Grant, M.C., Minmore (gr. Mr. George Troup); Mr. R. Cook, Banff; Mr. J. Munro, Lessendrum; Mr. A. D. Murray, Cornhill; Mr. A. Chalmers, Tillynaught; and Mr. J. Findlay, Park, Cornhill.

MORAY AND NAIRN FORESTERS.

On the most recent excursion the members of the above branch visited the estate and woods of Aberlour, belonging to Sir John Findlay Bart., head of the family who have a preponderating influence in the proprietorship of the great Scottish neswpaper, *The Scotsman*. Like *The Gardeners' Chronicle*, *The Scotsman* was one of the very few newspapers that came through the Great Debacle without an issue missed— a great performance, and one reflecting the highest credit on all concerned. When the party arrived at Aberlour station, they found awaiting them Mr. Barbour, factor of the estate, and a number of conveyances kindly sent by Sir John. At the Home Farm, they received a warm and hearty welcome from Sir John, who takes a very keen interest in all pertaining to wood craft, as was evidenced by his accompanying the party throughout their wanderings. The wood first visited, composed of Larch and Scotch Pine, was planted in 1884, at a cost of £2 8s. 4d. per acre, about a quarter of the present day cost. Further up the hill other plantations and woods, growing at a height of over 700 feet above sea-level, were greatly admired. From thence the party visited the sawmill, where refreshments were served A visit was also paid to the gardens, where much was found to instruct and interest. *K.*

ROYAL SCOTTISH ARBORICULTURAL.

Northern Branch.

The latest excursion of the members of this branch, whose headquarters are in Inverness, proved a most interesting and instructive one, The venue was the Culbin Sands, Morayshire, where an important experiment in tree planting is being carried out by the Forestry Commission, which owns about 4,000 acres in this area, including 1,200 acres of moving sand. The great problem facing the Commissioners here is how to fix the moving sand and thus prevent further encroachment, and at the same time produce wood. It is a most intriguing problem, and, needless to say, greatly interested the woodmen. The main body, who were accompanied by Mr. Frank Scott, O.B.E., and Mr. J. F. Annand, B.Sc., the forestry divisional officers for Inverness and Aberdeen, left Inverness in the morning for the rallying place, Binsness. Here the party was met by the Earl of Leven and Melville, the President of the Northern Branch. The first call was made at the estate of Mr. Chadwick, where some splendid work has been done in creating plantations on the sandy wastes. It was noticed here that Spruce was not doing at all well in the sandy soil, but that Pinus ponderosa and its variety Jeffreyi were doing splendidly. Proceeding across the sand dunes, through a fine clump of Corsican Pine, the foresters saw how, in the absence of fixing material, sand had already overwhelmed a considerable area of plantation, and was advancing with irresistible force. The Forestry Commissioners' area was next visited. In one section which had already been planted and timber cut some years ago were several experimental areas with Scots Pine and Pinus contorta. This Pine was growing at about twice the rate of the Scots Pine. A visit was then paid to a large area of moving sand, planted with Marram Grass, which has attained a good growth and among rows of which are planted Corsican Pine. The Marram Grass has a wonderful effect in binding the sand together and thus preventing drifting. The position meantime on those famous Culbin Sands, which in a single night overwhelmed miles of the forest and the most productive area in Morayshire, is one of great interest to foresters, and will remain a source of interest for years to come.

GIRVAN HORTICULTURAL.

AFTER a long interval of thirty years this Society has been reorganised. The show held recently was a pronounced success. Close on 750 entries were received in the different classes, and the Town Hall was crowded throughout the afternoon and evening by visitors. There were 141 competitive classes, and no fewer than twenty-eight special prizes were offered, including a trophy for the most points in the cut flower section, and several silver cups.

An outstanding feature of the competitive exhibits was the remarkable triumph of Mr. S. WATSON, gardener, Ardinillan House, who won seven first prizes in the cut flower section (open to gardeners and to amateurs), and eight in the fruit section, including the classes for two bunches of black Grapes, one bunch of the finest flavoured Grapes, four Peaches, one Melon, six dessert Pears, six dessert Apples, a collection of Apples and twelve green Gooseberries. He also excelled in the classes for two pots of Begonias, two pots of Pelargoniums and two of Coleus.

Mr. JOHN WATSON, Maybole, excelled in the classes for three Ferns, three greenhouse plants, double Petunias and Hydrangea in the pot plants section, and he also won seven first prizes in the amateurs' classes.

As was to be expected, the vegetable classes were particularly strong, and with an average entry of fifteen and sixteen in several of the classes, the task of judging was not a light one. The first prize for two collections went to Mr. JAMES LAW (ten varieties), and Mr. SAM SCOBIE, Dailly (six varieties), respectively and both of these competitors were successful in a number of other classes.

Other competitors who were prominent in the prize list included Messrs. D. BROWN, Maybole; R. LAWSON, Kirkoswald; JAMES LAW, Dailly; JOHN ALLAN, JAMES LAIRD, D. SCOTT, J. MCINTOSH, WILLIAM SCOBIE, JAMES BONE, J. T. CURRAN, DAVID BROWN NIEL MCMULLAN, EDWARD BLEDGE, J. B. HYSLOP, JAMES CROSBIE, Mrs. KERR and GEORGE TELFER, the last of whom staged the best Rose in the show.

ROYAL HORTICULTURAL.

THE following awards have been made to Kohl Rabi by the Royal Horticultural Society after trial at Wisley.

AWARDS OF MERIT.

Earliest White, sent by Messrs. J. CARTER AND CO.; *Delicatesse*, sent by Mr. W. W. JOHNSON; *Early Vienna White*, sent by Messrs. WATKINS AND SIMPSON. All these varieties are alike.

HIGHLY COMMENDED.

Extra Early, sent by Messrs. DAEHNFELDT AND JENSEN, Dvorsky's Prague, sent by Messrs. HEINEMANN; both these varieties are alike; Forcing Purple Vienna, sent by Messrs. COOPER, TABER AND CO.

COMMENDED.

Vienna Purple Extra Early, sent by Messrs. ZWAAN AND VAN DER MOLEN; Early Purple Vienna, sent by Messrs. A. DICKSON AND SON. These two varieties are alike.

The following awards have been made to the undermentioned flowers by the Royal Horticultural Society after trials at Wisley.

Portulaca.

HIGHLY COMMENDED.

Thellusoni and Double aurea, both sent by Mr. DAWKINS.

Helichrysum.

HIGHLY COMMENDED.

Silver Ball, sent by Messrs. J. CARTER AND CO.; Bright Terra Cotta, sent by Messrs. WATKINS AND SIMPSON; Fireball, sent by Messrs. J. CARTER AND CO.; Monstrosum double mixed, sent by Messrs. R. VEITCH AND SON.

Statice.

HIGHLY COMMENDED.

Sinuata rosea superba, sent by Messrs. WATKINS AND SIMPSON; sinuata True Bell, sent by Messrs. WATKINS AND SIMPSON and Messrs. NUTTING AND SONS, LTD.

The following awards have been made to Gladioli by the Royal Horticultural Society after trial at Wisley.

Gladioli.

AWARDS OF MERIT.

Souvenir, sent by Messrs. R. VEITCH AND SON, Messrs. BARR AND SONS, Messrs. DOBBIE AND CO., Messrs. VAN TUBERGEN, Messrs. E. WEBB AND SONS, Mr. A. DAWKINS, Messrs. R. H. BATH, LTD.; *Bernard Kuhn*, sent by Messrs. R. H. BATH, LTD.; *Clio*, sent by Mr. NIEUVENHUSEN; *La Consance*, sent by R. H. BATH LTD.; *Ada*, sent by Messrs. GRULLEMANS and Messrs. BARR AND SONS; *Pinkie*, sent by Messrs. KELWAY AND SON; *Vinula*, sent by Mr. VAN TUBERGEN and Messrs. NETHERLANDS G. S.; *Scarlet Cardinal*, sent by Mr. VAN. TUBERGEN, Mr. NIEUVENHAUSEN, Messrs. NETHERLANDS G. S., Messrs. DOBBIE AND CO. and Messrs. R. H. BATH, LTD.; *Rev. J. Stubbs*, sent by Messrs. KELWAY AND SON.

Large-flowered Primulinus Hybrids.

AWARDS OF MERIT.

La Lys, sent by Messrs. R. H. BATH, LTD.; *Revue* sent by Mr. G. CHURCHER; *Ethelyn*, sent by Mr. G. CHURCHER; *Golden Gleam*, sent by Messrs. KUNDRED; *Joannita de Castro*, sent by Messrs. R. H. BATH, LTD., and Messrs. PFITZER; *Walter Blom*, sent by Messrs. PFITZER and Messrs. R. H. BATH, LTD.; *Camillo Schneider*, sent by Messrs. PFITZER and Messrs. KONYNENBURG AND MARK.

HIGHLY COMMENDED.

L'Innocence, sent by Messrs. VAN TUBERGEN, Messrs. NETHERLANDS G. S. and Messrs. DOBBIE AND CO.; White Lady, sent by Messrs. NIEUVENHUSEN; Elberton, sent by Messrs. R. H. BATH, LTD., Mr. AMOS and Messrs. LOWE AND GIBSON; Gelyce, sent by Mr. G. CHURCHER; Phyllis Kelway, sent by Messrs. KELWAY AND SON; Coquette, sent by Mr. VAN TUBERGEN; Orange Brilliant, sent by Messrs. R. H. BATH, LTD., Messrs. NETHERLANDS G. S., Mr. A. DAWKINS, Mr. VAN TUBERGEN, Messrs. GRULLEMANS, Mr. AMOS, Messrs. BARR AND SONS, Messrs. R. VEITCH AND SON, and Messrs. DOBBIE AND CO.; Sunrise, sent by Messrs GRULLEMANS; Psyche, sent by Messrs. NETHERLANDS G. S., Messrs. E. WEBB AND SONS, Mr. VAN TUBERGEN, and Messrs. R. H. BATH, LTD.; Niobe, sent by Messrs. R. H. BATH, LTD., Messrs. BARR AND SONS, Mr. VAN TUBERGEN, and Messrs. DOBBIE AND CO.; Bronze Queen, sent by Messrs. GRULLEMANS; Mrs. Cran, sent by Messrs. KELWAY AND SON; Salmon Beauty, sent by Mr. AMOS and Messrs. R. H. BATH, LTD.; Salmonea, sent by Messrs. R. H. BATH LTD., Messrs. E. WEBB AND SONS, Mr. VAN TUBERGEN, Messrs. NETHERLANDS G. S., Messrs. BARR AND SONS, Messrs. R. VEITCH AND SON and Messrs. DOBBIE AND CO.; Arlon, sent by Messrs. R. H. BATH, LTD.; Maidens Blush, sent by Messrs. R. VEITCH AND SON, Messrs. BARR AND SONS, Messrs. GRULLEMANS, Messrs. E. WEBB AND SONS, Mr. A. DAWKINS, Messrs. NETHERLANDS G. S., Messrs. R. H. BATH, LTD. and Messrs. DOBBIE AND CO.; Mrs. George Kellner, sent by Messrs. LOWE AND GIBSON; Daphne, sent by Messrs. DOBBIE AND CO., Messrs. NETHERLANDS G. S. AND Messrs. R. H. BATH LTD.; Rosaura, sent by Messrs. VAN TUBERGEN and Messrs. NETHERLANDS G. S., Messrs. R. H. BATH AND CO. and Messrs. DOBBIE AND CO.; L'Arques, sent by Messrs. R. H. BATH LTD.; Midsummer Dream, sent by Messrs. R. H. BATH LTD., Messrs. LOWE AND GIBSON and Messrs. KUNDRED; Firecrest, sent by Mr. G. CHURCHER L'Orillon, sent by Messrs. R. H. BATH LTD., Treclome, sent by Mr. LOAT; Mrs. Swainson, sent by Messrs. KELWAY AND SON; Alice Tiplady, sent by Messrs. R. H. BATH LTD., Messrs. NETHERLANDS G. S., Messrs. AMOS, Messrs. BARR AND SONS and Messrs. DOBBIE AND CO.; Orange Konigin, sent by Messrs. PFITZER; Orange Queen, sent by Messrs. PFITZER, Messrs. E. WEBB AND SONS, Messrs. VAN TUBERGEN, Messrs. KONYNENBURG AND MARK, Messrs. DOBBIE AND CO., Messrs. BARR AND SONS and Messrs. R. H. BATH LTD.; Ernst Zahn, sent by Messrs. R. H. BATH LTD. and Messrs. PFITZER; Buenos Ayres, sent by Messrs. PFITZER; Opal, sent by Messrs. KUNDRED; Linton, sent by Messrs. R. H. BATH, LTD.; L'Authee, sent by Messrs. R. H. BATH, LTD.; Anamosa, sent by Messrs. R. H. BATH, LTD.; Dorothy Wheeler, sent by. Messrs. DOBBIE AND CO., and Messrs. R. H. BATH, LTD.; Rose Luisante, sent by Messrs. BARR AND SONS, Mr. AMOS, Messrs. R. H. BATH, LTD. and Messrs. DOBBIE AND CO.; L'Yser, sent by Messrs. R. H. BATH, LTD.; L'Exeuette, sent by Messrs. R. H. BATH, LTD.; Arden, sent by Messrs KUNDRED; Inspector Ludewig, sent by Messrs. R. H. BATH, LTD.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

FRIDAY, SEPTEMBER 17.—*Committee present:* J. B. Adamson, Esq. (in the chair), Messrs. C. Branch, A. Burns, A. Coningsby, J. Cypher, J. Evans, A. Keeling, D. McLeod and H. Arthur (Secretary).

FIRST CLASS CERTIFICATES.

Cattleya Lady Veitch var. Mrs. Gratrix.—A fine flower with pure white sepals and petals; the fimbriated lip is of brilliant colour with orange lines in the throat. From S. GRATRIX, Esq.

Laelio-Cattleya Profusion, Pitt's variety.—A well-shaped flower of fine colour, the large lip being deep velvety-crimson. From H. T. PITT, Esq.

AWARDS OF MERIT.

Odontoglossum Philomene Mauritania; Miltonia spectabilis extraria; M. William Pitt var. Purple Prince; Cattleya Mira var. Danegelt; C. Queen Elizabeth (Iris × newingtonense); C. Wembley; Laelio-Cattleya Soulange, Rosslyn variety; Sophro-Laelio-Cattleya Isabella. From H. T. PITT, Esq.

Laelio-Cattleya Soulange var. Brilliant; L.-C. Mrs. Ward; Cypripedium Irine; C. Earl of Chester var. Lucifer. From J. B. ADAMSON, Esq.

Cattleya Adula, Haddon House variety and *Cypripedium Psyche Mrs. H. Druce Gig.* From Mrs. P. SMITH.

Vuylsteakeara Gratrixiae. From S. GRATRIX, Esq.

GROUPS.

Gold Medals were awarded to excellent groups of Orchids staged by the following: J. B. Adamson, Esq., Blackpool (gr. Mr. J. Howes): S. GRATRIX, Esq., West Point (gr. Mr. C. Branch): and H. T. PITT, Esq., Stamford Hill (gr. Mr. W. THURGOOD).

Mrs. BRUCE AND MISS WRIGLEY, Bury (gr. Mr. A. Burns), staged a group to which a Silver Medal was awarded. A Silver Medal was also awarded to Messrs. J. CYPHER AND SONS, Cheltenham.

GUILDFORD GARDENERS'.

Following up the success of the Rose "At Home," a month ago, the Guildford and District Gardeners' Association arranged for a display of Dahlias, and a friendly competition amongst the members resulted. For exhibits of twelve blooms, any variety, Miss **Twinn**, of Horsley, took the first Certificate of Merit; Mr. **Nash**, Mayford, won the second, and Mrs. **Scudamore** (gr. Mr. Nash), the third.

Numbers of groups of Dahlias, not for competition were also staged. In this class excellent exhibits were shown by Mr. A. E. **Tylecote** (mostly Stars); Col. **Younger** (gr. Mr. Souter), Miss **Twinn**, whose collection contained several blooms of remarkably good colours, raised from seeds; and a very fine collection from Messrs. J. **Cheal and Sons**, of Crawley, representing Cactus, Double, Collerette and Pompon sections.

During the evening, under the presidency of Alderman W. T. Patrick, J.P., a meeting of members was held, when Mr. Middlecote (Messrs. Cheal's representative) gave a homely chat on The Cultivation of Dahlias. Questions which came freely from members of the audience, drew forth other valuable hints. From the interest taken, it is evident that the Dahlia is becoming increasingly popular in mid-Surrey. It was resolved to hold other meetings on similar lines, and members were invited to bring to future gatherings anything they may grow of merit or interest. The next meeting will be on Monday, 11th October, when Mr. Auton, of Pyrford Court Gardens, will be the speaker.

TRADE NOTES.

A consignment of bulbs of Lilium Harrisii has recently arrived from Bermuda. In pre-war times considerable quantities of bulbs were shipped to this country and grown with much success, but of late years, by far the greater part of the bulbs exported have gone to New York. Many readers will remember the splendid display of Bermuda Lilies, both outside and inside the Bermuda pavilion at Wembley exhibition, and many enquiries were received as to the possibilities of obtaining the bulbs. This year the consignment mentioned was forwarded and the greater part of it has already been sold.

The Bermuda Department of Agriculture has recently offered to the secretaries of various horticultural societies prizes of one dozen Easter Lilies to be competed for at their exhibitions, and we are advised by the London agents of the Bermuda Trade Development Board (whose offices are at 51-52, Chancery Lane, W.C.2.) that many societies have accepted this offer. All bulbs exported from Bermuda are subject to Government inspection, and this season the inspection has been far more rigid than ever before.

Subscriber writes: "As one interested in the history of the Gladiolus, may I add to Messrs. Kelway and Son's letter, on p. 279, the following notes:—In a letter dated July 29, 1912, addressed to *The Horticultural Advertiser*, Messrs. Kelway and Son wrote: 'Although we have been working upon the new race ever since we received Primulinus, in the year 1903, we have succeeded in saving very little seed from Primulinus fertilised with pollen from the large-flowered hybrids, and have not yet flowered any, although we hope to do so.' Is it not possible that others were successful where Messrs. Kelway failed? For at the show held on July 29, 1913, just a year later, Messrs. G. Zeestraten, of Holland, won a Silver Medal for the best six varieties of Primulinus hybrids. From the Gladiolus nomenclature compiled by Clark W. Brown, Messrs. Kelway are credited with the first hybrid under date and name 'Topaz, 1913.' In 1914, Messrs. Vaughan (U.S.A.) introduced the variety Sunbeam. In 1915, Messrs. Lemoine and Co. sent out Major and Salmoneous. In 1915, Messrs. Kunderd introduced Alice Tiplady and others, and in the same year Messrs. Krelage appeared on the scene. In 1916, Messrs. Grullemans were credited with no fewer than sixty-five varieties, including Maiden's Blush, while Messrs. Krelage, Lemoine and others, as well as Messrs. Kelways, introduced many new varieties, and so it has gone on, both introducers and varieties increasing with amazing rapidity until this year, when a noticeable decrease in the new lists was welcomed. The work of elimination should now be taken in hand. But to return to the raising of Primulinus hybrids—whatever name they may be given—it would be interesting if the other hybridisers would write a short account of their failures and successes for publication in your journal."

ANSWERS TO CORRESPONDENTS.

A Twin Apple.—*H. W.* The specimen you sent is a good example of a twin Apple; interesting, but not unusual.

Begonias attacked by Thrips.—*G. C.* The Begonias are suffering from an attack of thrips, numerous examples of which were found on the leaves received. The plants should be carefully dipped in a suitable insecticide at intervals of a few days until the pests are destroyed; a moister atmosphere should be provided, as thrips flourish under dry conditions.

Cabbage-Root Fly.—*B. B.* Your Cabbages are attacked by the larvae of the Cabbage-Root Fly, Phorbia brassicae. Plants that are badly affected cannot be saved, but prevention may be secured by the use of tarred felt discs. These must be fixed around each plant so soon as it is put out. Some growers adopt the plan of watering the plants on the fourth, tenth and twentieth day after planting out with a solution of corrosive sublimate applied at the rate of one ounce in ten gallons of water. Great care should be taken when using this substance as it is a dangerous poison, but at the strength advised it is weaker than that used as a throat spray for human beings. It has the effect of killing the larvae.

Celery Diseased.—*Anxious and Ride.* Your Celery is attacked by Septoria apii, a disease which may be controlled by sterilising the seed with hydrogen peroxide. When the disease is prevalent in the seed-bed, the plants should be sprayed with Bordeaux mixture so soon as they appear above the ground, and once or twice a week until transplanted. Plants that are diseased in the garden should be sprayed with Bordeaux mixture at ten-day intervals.

Loganberries with Grubs.—*E. C. B.* The trouble is caused by the Loganberry Beetle, the larvae of which spoil the fruit. It is a very common pest of this crop and often renders its cultivation almost impossible. No really successful remedy has, so far, been found. The most hopeful treatment is to spray the plants three times with arsenate of lead whilst the bloom is opening, the applications being given when the blooms are one-third, two-thirds and fully open. This kills many of the beetles, which at that time are amongst the blooms. The use of this poisonous wash would be impossible if there were vegetables close to the Loganberries. As the pupae are in the ground during the winter, it might be worth while to try the effect of digging in one of the advertised soil fumigants. The old fruiting canes should be cut off low down and burnt.

Mussel Scale on Ceanothus Shoots.—*E. McI.* The shoots of your Ceanothus are affected with Mussel Scale. Where only moderate numbers of scales are present they may be removed by scraping the bark and scrubbing the latter with some strong specific, such as caustic alkali. When using this strong chemical, the hands should be protected with a pair of gloves. If, however, the shrub is very badly affected, the only course is to uproot and destroy it on the garden fire.

Names of Fruits.—*C. M.* 1, Apple Benoni; 2, Pears: Emile d'Heyst; 3, Marguerite Marillat; 4, Noveau Poiteau; 5, Flemish Beauty; 6, Fondante d'Automne; 7, Charles Ernest; 8, Beurré Gifford. *J. E.* 1 and 5, decayed; 2, Josephine de Malines; 3 and 6, Doyenné du Comice; 7, not recognised; 8, Magnate; 9, Beurré Diel; 10, Délices d'Angers; 11, Conference; 12, Comte de Flandre. *C. C. M.* 1, 4 and 6, Williams's Bon Chrêtien; 2, missing; 3, Doyenné Gris; 5, Autumn Nelis; 7, Beurré Clairgeau; 8, decayed; 9 and 10, Maréchal de la Cour. *A. F., Bucks.* 1 and 2, Triomphe de Vienne; 3, General Todleben; 4, Vicar of Winkfield; 5, Bergamotte Esperen; 6, Josephine de Malines; 7, Beurré Sterckmans; 8, Duchesse d'Angoulême; 9, Brockworth Park; 10, Pitmaston Duchess; 1, Charles Ross. *P. C.* 1, Beurré Superfin; 2, Pitmaston Duchess; 3, Knight's Monarch; 4, decayed *G. F. M.* 1, Pitmaston Duchess; 2, Beurré Hardy. *B. B. Stockport.* Pear Citron des Carmes. *Altho.* Pear Beurré Clairgeau. *H. W.* Apple Lord Grosvenor.

To Destroy Earth Worms in Flower Pots.—*Dr. R. F. S., India.* Dissolve a little slaked lime in the water used for watering the plants and the worms will come to the surface. It is usually necessary to re-arrange the drainage when worms have entered flower pots because they carry down the soil in a fine state of division and this often chokes the drainage.

Vine with Warty Growth.—*H. G. D.* Warty outgrowths on the stems of Vines are often caused by an excessive amount of atmospheric moisture, due to the vineries being kept too close and damp. They are akin to warty leaves (see reply to *W. T.*). Shanking is usually attributed to some wrong condition at the roots, such as a stagnant, water-logged soil caused by imperfect drainage. When the Vines are defoliated lift the roots as advised by Mr. Pateman on p. 244.

Warty Mimosa Leaves.—*W. T.* The Mimosa leaves are affected with sap wart, or intumescences. These are often green at first, but become brown later. Sap wart production is due to abundant moisture and to a damp atmosphere, and is often prevalent in late summer and autumn.

Weeds in Pond.—*B. J. D.* The weeds could be treated with copper sulphate at the present time if you like, because there would be fewer next spring to start into fresh growth. They do not really die completely but some of them change their form, more or less, and sink to the bottom or attach themselves to the mud or to the edges of the pond. The weeds could be treated in autumn and in early summer when they begin to be conspicuous or treated only in early summer to get the advantage of clear water during the season. It is well to note that sulphate of copper will not kill flowering plants, not even Duck Weed, at the strength mentioned in these pages for September 11; but that is the strongest solution that can be used, where the safety of fish or ducks is concerned. This strength has been used in Kew Gardens without ill effects to fish and birds. What the solution does kill are the low organisms known as Algae, such as Conferva, Vaucheria, etc., which make the water green and slimy. If the pond varies in width and depth, you could take measurements at three different places and divide them by three to get the average. That would enable you to ascertain the number of cubic feet of water in the pond with approximate correctness, also the number of gallons, and likewise the weight of copper sulphate to be used.

Communications Received.—H. B.—P. C.—A. E. F. J. F. S.—H. C. C.—F. C. P.—C. C. R.—H. W. J.—Subscriber.—H. G. M.—E. H. B.

MARKETS.

COVENT GARDEN, Tuesday, September 28th, 1926.

We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Tuesday by the kindness of several of the principal salesmen, who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general average for the week preceding the date of our report. The prices depend upon the quality of the samples, the way in which they are packed the supply in the market and the demand, and they may fluctuate, not only from day to day, but occasionally several times in the day.—Eds.

Plants in Pots, etc.: Average Wholesale Prices.

(All 48's except where otherwise stated).

	s. d. s. d.
Adiantum cuneatum per doz. ...	10 0-12 0
—elegans ...	12 0-15 0
Aralia Sieboldii	9 0-10 0
Araucarias, per doz.	30 0 42 0
Asparagus plumosus ...	12 0-18 0
—Sprengeri ...	12 0-18 0
Aspidistra, green	36 0-60 0
Asplenium, doz.	12 0-18 0
—32's	24 0-30 0
—nidus ...	12 0-15 0
Cacti, per tray —12's, 15's ...	5 0- 7 0
Celosias, 48's, per doz. ...	9 0-10 0
Chrysanthemums, in variety, 48's, per doz. ...	15 0-21 0
Crotons, doz. ...	30 0-45 0
Cyrtomium ...	10 0-25 0
Erica gracilis, 48's, per doz.	24 0-36 0
— 60's, per doz.	9 0-12 0

	s. d. s. d.
Erica nivalis, 48's per doz.	30 0-36 0
—60's ,,	15 0-18 0
—72's ,,	9 0-10 0
Hydrangeas, white, 48's, per doz.	24 0-70 0
Lilium longiflorum (Harrissii) 48's, 32's per doz.	30 0-42 0
Lilium lancifolium rubrum, 32's, 48's each	2 6--3 6
— —album, 32's, 48's each ...	2 6—3 6
Marguerites, 48's per doz. ...	18 0-21 0
Nephrolepis in variety ...	12 0-18 0
—32's	24 0-30 0
Palms, Kentia	30 0-48 0
—60's	15 0-18 0
Pteris, in variety	10 0-15 0
—large, 60's ...	5 0- 6 0
—small ...	4 0- 5 0
—72's, per tray of 15's ...	2 6- 3 0

Cut Flowers, etc.: Average Wholesale Prices.

	s. d. s. d.
Adiantum decorum, doz. bun.	8 0-10 0
cuneatum, per doz. bun. ...	6 0--8 0
Asparagus plumosus per bun., long trails, 6's ...	2 6--3 6
med. sprays	1 6--2 6
short ...	0 9--1 3
—Sprengeri, bun. long sprays	1 6—2 0
med. ,,	1 0—1 6
short ,,	0 4—1 0
Asters, white per doz. bun. ...	5 0--8 0
—coloured, per doz. bun. ...	4 0--6 0
—single varieties per doz. bun.	2 6--3 0
Bouvardia, white per doz. bun.	9 0-12 0
Carnations, per doz. blooms...	2 0—3 6
Chrysanthemums, white, per doz.	2 0—4 0
—bronze ...	1 6—2 6
—white, per doz. bun. ...	6 0-12 0
—bronze, per doz. bun. ...	6 0—8 0
—yellow, per doz. blooms ...	2 0—4 0
—yellow, per doz. bun. ...	8 0-10 0
—pink, per doz. blooms ...	2 0—3 0
—pink, per doz. bun.	9 0-10 0
Cornflower, blue, per doz. bun.	2 0 2 6
Croton leaves, per doz. ...	1 9—2 6
Fern, French, per doz. bun.	10 0-12 0
Forget-me-not, per doz. bun.	6 0—8 0
Gardenias, 12's, 18's per box .	4 0—6 0
Gladiolus—	
—Giant varieties, per doz. spikes	2 0—3 0
Gloriosa, per doz. blooms ...	5 0—6 0
Heather, white, per doz. bun.	6 0—9 0
—pink, per doz. bun.... ...	6 0—8 0

	s. d. s. d.
Honesty, per doz. bun.... ...	15 0-18 0
Lapageria, white, per doz. blooms	2 6—3 6
Lilium auratum, per doz. blooms ...	7 6—9 0
—longiflorum long, per doz.	3 0—3 6
Lilium speciosum rubrum, long, per doz. blooms ...	2 6—3 6
— short, doz. blooms ...	2 0—2
—lancifolium album, per doz. blooms, long	6—3 6
Lily-of-the-Valley, per doz. bun.	18 0-30 0
Michaelmas Daisies, per doz. bun. ...	3 0—6 0
Orchids, per doz.	
—Cattleyas ...	36 0-42 0
—Cypripediums per doz. blooms ...	6 0—8 0
Physalis (Cape Gooseberry,) per doz. bun.	12 0-15 0
Roses, per doz. blooms—	
—Madame Abel Chatenay ...	2 0—3 0
—Molly Sharman Crawford	1 6—3 0
—Richmond ...	2 6—3 0
—Golden Ophelia	2 0—3 0
—Sunburst ...	2 6—3 0
—Mrs. Aaron Ward ...	1 6—2 0
—Madame Butterfly	2 0—3 6
Scabiosa caucasica, per doz. bun.	5 0—6 0
Smilax, per doz. trails ...	3 0—4 0
Statice sinuata, per doz. bun.	6 0—9 0
Stephanotis, per 72 pips ...	3 6—4 0
Stock, double white, per doz. bun. ...	6 0—8 0
Sultan, white, per doz. bun.	3 0—4 0
—mauve, per doz. bun. ...	3 0—4 0
Violets... ...	2 6—3 6

Remarks.—The sudden change to colder weather has already resulted in lessened supplies generally. Carnations, Liliums and Roses have advanced most in price since Saturday last and a further increase in their value is anticipated if the weather continues cold. Chrysanthemums remain the chief attraction, but there is still a limited supply of good white disbudded blooms. The best sorts on offer are Debutante, Elsenham White, Countess and Sanctity. Coloured sorts are more plentiful and include Cranford Pink, Delight and Pink Profusion, pink; Alcalde, Almirante, Harvester and September Glory, bronze; Mercedes, Holicot Yellow, and Cranford Yellow, yellow. Best sorts in bunch-spray are Betty Spark, Phoenix, Verona, Horace Martin and Mrs. J. Pearson. Asters are practically over for the season. There is an abundant supply of Michaelmas Daisies in variety, the Amellus King George variety being most in demand. Gladioli are gradually finishing; scarlet varieties are the better quality now on sale. Physalis is in good demand and at the present time is the finest so far received this season. Violets are more plentiful, and the colder weather is more suitable for the sale of these flowers. Ericas are the most attractive subjects in this department, including Erica gracilis (pink) and E. nivalis (white); these are on sale in forty-eights, sixty's and thumb pots. Solanums have already made their first appearance, but there is little demand for them at present. The numbers of Chrysanthemems in pots are somewhat limited, and best quality plants are soon purchased. Ferns, Palms and other foliage plants are good in quality and in sufficient quantities for the moderate demand.

Fruit: Average Wholesale Prices.

	s. d. s. d.
Apples, English—	
—Worcester Pearmain, cases... ...	20 0-25 0
½-sieve ...	4 0-10 0
—James Grieve, ½-sieve ...	4 0--8 0
—Lord Derby per bushel ...	6 0-11 0
—Bramley ...	6 0-12 0
—Lane's Prince Albert, bush.	6 0-11 0
—Warner's King	6 0 -10 0
—Tyrolean ...	10 0-16 0
—Californian Newtown Pippins	14 0-15 0
—Jonathan ...	18 0-22 0
—American Cox's Orange Pippin, per case ...	18 0 20 0
Apples, Italian, per box ...	7 0-10 0
Bananas ...	11 0-22 6
Blackberries, lb.	0 2—0 3
Cob nuts, per lb.	0 4—0 5
Figs, forced, per doz.... ...	3 0-12 0
—French, per box	1 0—1 6
—Italian, per box	1 0—1 6
Grape Fruit—	
—Blue Goose ...	— 30 0
—Cape: per case	25 0-30 0
—Isle of Pines...	25 0-30 0
Grapes, English Black Hamburgh, per lb	1 0--2 0

	s. d. s. d.
Grapes, Canon Hall... ...	2 0--5 0
—Gros Colmar	1 6--2 6
—Alicante ...	1 0--2 6
—Muscat ...	2 0--7 0
Lemons, Messina, per case ...	14 0-20 0
—Naples ...	18 0-20 0
Melons—	
—Canteloup ...	2 0--5 0
—Others ...	1 6--4 6
Oranges—	
—Californian ...	20 0-25 0
Peaches English, per doz. ...	12 0-36
Pears, English—	
—Conference, ½-sieve ...	4 0- 6 0
—Comice ...	6 0-10 0
—Williams's ... Bon Chretien	4 0- 6 0
—Clapps's Favourite ...	4 0- 5 0
—Fertility ...	4 0- 4 6
Pears—	
—Californian Comice—	
½-cases ...	10 0-12 0
cases ...	20 0-22 6
—French Beurré Hardy,	2 6--4 0
—Tyrol	8 0-10 0
—ordinary ...	3 0--4 0
Pines	2 0--4 0
Plums, English—	
—Monarch ...	10 0-12 0
Prunes, Californian ...	12 0-13 0
Prunes... ...	6 0—8 0

Vegetables: Average Wholesale Prices.

	s. d. s. d.
Beans—	
—French per lb.	— 0 6
—Runner, bush.	5 0—6 0
Beets, per cwt.	5 0--6 0
Cabbage, per doz.... ...	2 0--3 0
Carrots, per ½ bag ...	4 0--4 6
Cauliflowers, per doz.... ...	3 0--5 0
Cucumbers, per doz.... ...	3 6--5 0
—Flats ...	12 0-16 0
Horseradish, per bundle ...	1 6--2 0
Lettuce, round, per doz. ...	1 6--2 6
Marrows, ...	2 0--7 0
Mushrooms	
—cups	4 0—5 0
—Broilers ...	3 0—4 0
—Field... ...	1 6—2 0
Onions—	
Valencia ...	8 0-10 0

	s. d. s. d
Parsnips, per cwt. ...	5 0--6 0
Potatos—	
—King Edward per cwt. ...	5 0--6 0
—others ...	4 0--4 6
Spinach, per bushel ...	4 0--6 0
Sprouts Brussel's per ½ bag ...	4 6—7 0
Tomatos—	
—English, pink new crop ...	4 0—5 0
—pink and white, new crop ...	4 0—5 0
—pink, old crop	2 0—3 0
—pink and white, old crop ...	2 0—3 0
—blue ...	2 0--3 0
—white ...	2 6--3 0
—Guernsey ...	1 6—2 6
—Jersey ...	1 0—2 0
—Dutch ...	1 3--2 0
Turnips, per cwt.	5 0--7 0

Remarks.—Business has been more brisk during the past week, a greater volume of produce has been handled and the general demand was greater. Apples are an important trade just now. Consignments from the United States, Nova Scotia and British Columbia are heavy, and with fairly heavy quantities from the Continent the shortage of home-grown Apples is hardly noticeable, unfortunately for the English grower who has but few fruits to market. Pears are plentiful, mainly from central Europe. A few good English-grown fruits of Doyenné du Comice and Beurré Hardy Pears are available, but, generally, home-grown Pears are spotted and not in good condition. Plums are scarcer and a few fruits of Monarch, from cold store, are selling well. Aylesbury Prunes are in demand. Hothouse fruits, such as Grapes, Peaches, Nectarines and Figs are a steady trade, and excepting Peaches, which are very dear, are quoted at prices which show little or no change from those of last week. Tomatos are plentiful and cheap; Jersey Tomatos in particular are in heavy supply and other than a few English fruits of the new crop there can be little improvement in this section for some days. Cucumbers are in shorter supply and show some improvement in quotation. Mushrooms are scarce and their prices are comparatively dear. A few forced French Beans are available and generally are selling well. Lettuces are not plentiful. Green vegetables are wanted at better prices. Potatos are selling well and the outlook shows some improvement in prices.

THE WEATHER IN AUGUST.

Sunshine was above the normal for the district and totalled 176.8 hours, a daily average of 5.7 hours and a percentage of 37. August 1 was the brightest day, with 13 hours of almost continuous sunshine, while the 21st contributed 12 hours. There were no absolutely sunless days. The amount of rain collected was 54.10 millimetres—(2.13 ins.), considerably less than the average for August, which is frequently a wet month. The wettest day was the 20th which fielded 11.94 millimetres (.47 of an inch.) Temperature was comparatively high throughout, the mean being 60.3°, which is about 4° above normal. The highest maxim of 75° was reached on the 17th with 74° on the 5th and 73° on the 1st and 2nd. The lowest maximum was noted on the 31st, viz., 62° Lowest and highest maxima of 47° and 57° on the 7th and 6th respectively. On the grass, the mean temperature was 48.7°, the lowest reading of 41° being on the 21st. At one foot deep the soil temperature with slight variations fell 3° during the month. Air pressure (reduced to mean sea level) was greatest on the 1st, and least on the 21st, the mean being 1013.9 millibars. Thunderstorms accompanied by lightning occurred on the 6th, 11th and 20th. Winds were variable, occasionally high, but not of gale force. *William McClelland, Meteorological Station, Training College Gardens, Mayfield, Dundee.*

SCHEDULES RECEIVED.

Highgate and District Chrysanthemum Society.—Thirty-ninth exhibition, to be held at the Highgate Hall, on Wednesday and Thursday, November 3 and 4. Secretary, Mr. W. Kiy, 13, Carlingford Road, N.W.3.

Newport and District Horticultural Society.—Show to be held in Nainlee Parish Hall on Thursday, November 18.—Secretary, Mr. F. E. Brooks, 4, Christchurch Road, Newport.

Lancaster and District Horticultural Association.—Show to be held at Ashton Hall on Wednesday, November 10.—Secretary, Mr. J. J. Rickard, 55, Coulston Road, Lancaster.

Aberystwyth Chrysanthemum Society.—Twenty-third annual show to be held in the Parish Hall, on Wednesday, November 10.—Secretary, Mr. H. Sheraton, Tanycoed Aberystwyth

GARDENING APPOINTMENTS.

Mr. W. O. Huyter, previously second gardener to P. H. Bayer, Esq., as gardener to W. G. Bradshaw, Esq., of Down Park, Crawley Down, Sussex.

Mr. W. Merchant, Senr., as gardener to The Hon. Mrs. Pierrepont, Querns, Cirencester. (Thanks for 1/6 for R.G.O.F. Box.—Eds.)

Mr. Geo. F. Dore, for the past eleven years gardener to the late Hon. E. H. Pierrepont, The Querns, Cirencester, as gardener to R. C. Leigh, Esq., Lyburn Park, Nr. Lyndhurst, Hampshire. (Thanks for 1/- for R.G.O.F. Box.—Eds.).

Mr. Geo. Summersell, for the past nine years and six months gardener to Spencer J. Portal, Esq., J.P., Bere Hill, Whitchurch, Hampshire, as gardener to L. G. Bonham-Carter, Esq., Buriton House, Petersfield, Hampshire. (Thanks for 2/6 for R.G.O.F. Box.—Eds.)

Mr. A. Meads, as gardener to F. S. Parry, Esq., Westbrook Hay Gardens, Boxmoor, Hertfordshire.

CATALOGUES RECEIVED.

S. McGredy and Son, Portadown, N. Ireland.—Roses.

F. Cant and Co., Ltd., Braiswick Rose Gardens, Colchester.—Roses.

John Scott and Co., The Royal Nurseries, Merriott, Somerset.—Hints on hedges.

Foreign.

Vilmorin, Andrieux and Co., 4, Quai de la Mégisserie, Paris.—Gladiolus roots and sundry flower bulbs.

Letellier Fils and Co., La Maladrerie, Caen.—Fruits, etc.

V Lemoine and Son, 136, rue du Montet, Nancy.—Plants, bulbs, etc.

THE
Gardeners' Chronicle
No. 2076.—*SATURDAY, OCTOBER* 9, 1926.

CONTENTS.

Agricultural education in Holland 282
Alpine garden—
  Lewisia Tweedyi ... 286
  Saxifraga aquatica 286
  Saxifraga Aizoon ... 286
Apiary notes 295
Aster Barr's Pink ... 296
Books, notices of—
  A Garden of Herbs 292
Covent Garden Market, future of 282
Dresden, new park for 282
Forestry—
  Neglect of British forestry 288
Fruit crops, remarks on the condition of the 294
Fruiterers Company and an old custom ... 282
Fruit Register—
  Apple, S. T. Wright 293
  Apples of high colour 293
  Plum Jefferson ... 293
"Gardeners' Chronicle" seventy-five years ago 283
Gentiana acaulis as an edging plant ... 296
Hardy flower border—
  A good autumn Delphinium 286
  Papaver pilosum ... 286
Indoor plants—
  Heeria elegans ... 287
  Mandevilla suaveolens 287
  Pycnostachys Dawei and Coleus thyrsoideus ... 287
Lavender a vegetable in law 282
Melons, Cantaloup and Water 296
Morrison, Mr. Wm. ... 282
"Mother's Day," in Belgium 283
Nursery notes—
  Dahlias at Crawley 295
Orchid notes and gleanings—
  Brasso-Laelio-Cattleya C. W. Matthes 287
Paris Flower Market, Monday closing of... 283
Parks and gardens, public ... 281, 294
Poison gases for the control of insect pests, the uses of ... 281
Potato culture, problems of 296
Rose, a Gold Medal, in U.S.A. 282
Rose garden—
  The best garden Roses 288
Societies—
  Moray Field Club ... 293
  National Chrysanthemum 298
  Reading and District Gardeners' ... 298
  Royal Horticultural 297
Swanley Horticultural College, new superintendent of ... 282
Trees and shrubs—
  Abelia grandiflora... 289
  Hibiscus syriacus ... 289
  Late-flowering Heaths 289
  Rhododendron arboreum in Ceylon ... 289
Water garden—
  Poterium 286
Ward's, Mr. Kingdon, ninth expedition in Asia 290
Week's work, the ... 284
Wisley, developments at 292

ILLUSTRATIONS.

Brasso-Laelio-Cattleya C. W. Matthes 287
Morrison, Mr. W., portrait of 282
Plum Jefferson 293
Rhododendron arboreum in Ceylon, a fine specimen of 289
Saxifraga Aizoon 285
Ward's, Mr. F. Kingdon, expedition, views in... 290, 291

COLOURED PLATE.
Apple S. T. Wright.

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last fifty years at Greenwich, 50.4.

ACTUAL TEMPERATURE—
The Gardeners' Chronicle Office, 5, Tavistock Street, Covent Garden, London. Wednesday, October 6, 10 a.m. Bar. 30.2. Temp. 64°. Weather, Sunny.

Public Parks and Gardens. The wide extension of public parks and gardens and the yet wider interest in them place a pleasant but heavy responsibility on those entrusted with the laying-out and cultivation of these open spaces. And it may be said at once that the designers and cultivators justify the trust laid upon them. Indeed, it is certain that already our public gardens have had a beneficent influence on our private gardens. That influence is bound to grow and therefore it is desirable that those responsible should encourage by all means in their power the greatest possible diversity of design and planting. Why, for example, should not there be in every public park a "little garden" illustrating the possibility of making the small garden bright and attractive, not only at bedding-out time, but throughout the year. It is harder to make a small garden beautiful than it is to make a large garden beautiful. In the latter, special gardens can be designed to be visited in their season and to be ignored at other times. But the small garden needs must be attractive at all times. Yet the difficulty is not insurmountable. Growth of rampant things may be restricted without undue or any detriment to their beauty so that not only herbs, but shrubs and flowering trees may be planted even in the small garden. Here is an opportunity for the parks to perform a new national service; to show how a plain oblong of ground in despite of its fence or wall of red brick may be made attractive. Many people are stimulated to garden solely through enjoying the beauty of the flowers, shrubs, trees and close-cut lawns in their visits to municipal gardens which, owing to the public service attracting some of the cleverest men of the craft, are often show places in the truest sense. Parks often set the fashion in gardening for the general public and every nurseryman knows the demand that often arises for some kind or variety of flower, shrub or tree that has been a success in the local park. These wise enquirers—for they are wise who wish for things they know do well in their particular locality and soil—can usually only give a vague description of what he or she wants, being ignorant of the name owing to the too frequent neglect to label plants in parks, and while obstructive labels in pleasure grounds are to be condemned, a visit to, say the flower garden at Regent's Park in summer, will show how labelling can be done without offending. The naming of the plants, and even of the varieties, increases interest and confers a boon not only on the public but also the local nurserymen and helps to stimulate the trade of the latter. The public takes the greatest interest in novelties, therefore it behoves a Park Superintendent to try new plants and in other ways to obtain greater variety and beauty in the park under his control. This may entail some slight addition in the rates, but the members of Parks Committees usually take great pride in the department under their control and need little urging in acceding to reasonable requests for improvement. The Park Superintendent must, therefore, be up-to-date and visit flower shows and other parks to gain knowledge. In some parks there is great need for introducing new styles and fresh subjects in the summer-bedding schemes, while flower borders in these public places are often commonplace, yet they may be made as beautiful as those in the most pretentious of private gardens. We are aware that in the parks and open spaces of industrial towns certain plants are difficult or a failure altogether, but who can visualise the parks of such centres as London, Manchester, Cardiff and Glasgow over a period of, say twenty years, and not admit the wonderful progress that has been made in their beautification. It is somewhat surprising that so few parks have a special Rose garden, for no other flower gives more delight to everyone than the Rose and the plants have as long a period of flowering as most, whilst their cultivation is not very difficult, the principal need being to plant in a suitable soil. The Dahlia is also a fine subject for parks and these, as Mr. T. Hay has demonstrated in both Regent's Park and Hyde Park, can take the place of some of the commoner shrubs, such as Laurels, and Privets, in the forefront of shrubberies. But probably the greatest neglect of Park Superintendents in the past has been in not utilising the great wealth of trees and shrubs suitable for park planting, being content to grow only those which are easy. As more and more towns adopt town-planning schemes we may hope for extension of these open public spaces and we are glad to notice that many of the old country homes threatened by the builder are being acquired by municipalities for use as parks, which are the best investment for any city, town or village, for they add greatly to the amenities of the localities, give opportunity for healthy recreation for young and old, provide a quiet retreat for the convalescent and the aged and stimulate the love of the beautiful in the spread of home gardening.

"Rhododendrons for Everyone."—Many readers who were interested in the series of articles on Rhododendrons which appeared in our pages from the pen of Captain Kingdon Ward, will be glad to know that these were brought up-to-date by this intrepid traveller just before he started on his present expedition and are now published in hand-book form* under the title of *Rhododendrons for Everyone*. Some of the articles have been re-written and much further information on this popular genus of hardy-flowering shrubs has been added. Sixteen full-page illustrations of species—in their native habitat and also in this country—and of the finer garden varieties, illustrate the text.

The Uses of Poison Gas for the Control of Insect Pests.—A lecture with the above title will be given by Mr. Theodore Parker at the Strand Restaurant, 352, Strand, at 5 p.m. on Wednesday, October 13. This lecture has been arranged by the British Florists' Federation and is open to members of that Association, who may bring friends, provided they notify the Secretary, 5, Tavistock Street, W.C., how many friends are likely to attend. As Mr. Parker's subject is of engrossing economic interest, a large attendance is anticipated.

Plea for a Rose Garden at Lyons.—M. Phillippe Rivoire, the well-known nurseryman of Lyons, France, writing to the *Tribune Horticole*, of October 2, draws attention to the project, raised some time ago but never put into operation, of forming a Rose garden in the city of Lyons which would be worthy of the town, and would compare favourably with the beautiful park of the Tete-d'Or for which it is justly famous. The site indicated is that at the junction of the rivers Rhône and Saône, at present an unsightly marsh on the outskirts of the town. The difficulty is that of funds, as the expense would doubtless be considerable.

Extension of Spitalfields Fruit Market.—Preparations are now being made, by pulling down slum dwellings in the vicinity of Spitalfields Market, to double the size of the existing market, which was built in the seventeenth century and is quite inadequate for present purposes. The new fruit and vegetable market to be erected when the site is cleared has been designed to avoid congestion in the surrounding streets, and will take twelve months to complete, the estimated cost being £2,000,000.

New R.H.S. Hall.—Visitors to the R.H.S. fortnightly meeting on Tuesday last were agreeably surprised at the considerable amount of work that has been done since the previous fortnightly meeting, in excavating the site of the new hall in Elvaston Street. The provision of basements has necessitated the removal of a great depth of soil and during the process a skeleton of a young man was discovered. At an inquest held on the remains, it was stated that the site was formerly occupied by cottages, and the coroner expressed the opinion that the discovery pointed to some grim tragedy of the past.

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* *Rhododendrons for Everyone.* By F. Kingdon Ward, F.R.G.S. Oct., pp. 1–122; 16 illustrations. *The Gardeners' Chronicle, Ltd.*, 5, Tavistock Street, Covent Garden, W.C. 2. Price 3s. 6d. net.

New Garden Superintendent at The Horticultural College, Swanley.—Mr. David Wilmshurst, who has been appointed Garden Superintendent at the Swanley Horticultural College, has been gardener to Lord Dalmeny at Mentmore, Leighton Buzzard, for the past two years, and was previously gardener to Mr. David and Dame Maud Bevan, of Royston and Stevenage. Mr. Wilmshurst has had a long experience in practical horticulture in several noted gardens and is thoroughly qualified for his new position.

Lavender a Vegetable in Law.—Last Saturday at the Willesden Police Court a man who was charged with selling Lavender without a pedlar's license successfully pleaded that as the Lord Chief Justice had held that Lavender was a vegetable he did not need a license to sell it.

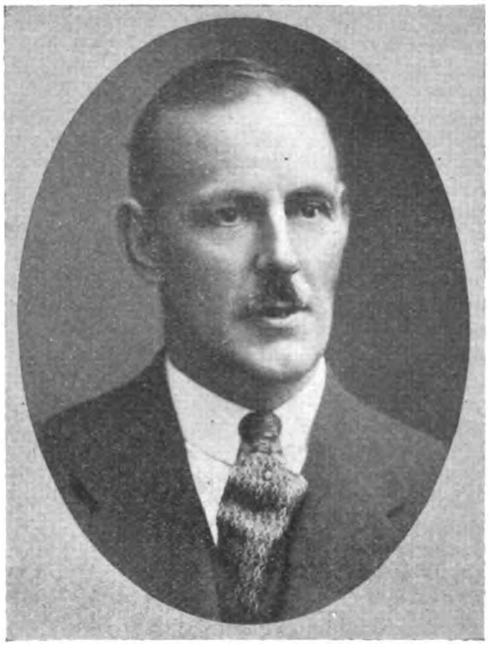
Gift of Fruit to the Lord Mayor of London.—The Master of the Fruiterers Company, Alderman Sir Kenystone Studd, made the annual presentation of British fruit to the Lord Mayor of London on Wednesday last, in lieu of the dues which were formerly levelled by the Chief Magistrate on the garden produce which came into the City of London. The Lord Mayor afterwards entertained the Fruiterers Company to dinner and in proposing the toast of "The Fruiterers Company," stated that its existing records dated back to 1292.

The Influence of Gardening.—That the influence of gardening has ever been for good needs no demonstration, but the need for extending that influence is as great as ever and the opportunities for so doing are greater than ever; we are glad therefore to learn that Mr. W. Auton, of Pyrford Court Gardens, is to lecture on The Influence of Gardening, at the Institute, Ward Street, Guildford, on Monday, October 11, at 7.30 p.m. This lecture is the first of a series for the winter session arranged by the Guildford Gardeners' Association.

Higher Agricultural Education in Holland.—On September 27, the Degree of Doctor of Agriculture was bestowed on Dr. Adolf Eduard Mayer (who was unfortunately detained in Heidelberg owing to the illness of his wife), at the State College of Agriculture at Wageningen for whose development in many directions Dr. Mayer is largely responsible. The Wageningen Institute, to which reference was made in our issue of September 25 under the heading of "Seed-testing in Holland," is being enlarged and extended, and new laboratories are being erected to accommodate the ever-growing volume of research work undertaken. The Pomological Garden and the grounds formerly used for growing vegetables and flowers are being given over for strictly botanical purposes, and more room is being provided for the fast-developing arboretum. The number of students accommodated increases each year, the figure in 1925-6 being 324.

Control of Narcissus Eelworm.—The control of eelworm in Narcissus bulbs is a matter of prime importance to those who grow Daffodils either for bulbs or for cut blooms, therefore all growers of these spring flowers should keep themselves informed in regard to recent experiments. The subject has been dealt with at length in these pages and we were among the first to publish and illustrate the method of control by hot water. Now, of course, this method is adopted by all the large market growers, whose experiences are of the greatest value to others. Such experiences are given in great detail in the September issue of the *Journal of the Ministry of Agriculture* by Mr. G. W. Gibson, of the Isles of Scilly Experimental Station, who states that a temperature of 110° even if maintained for some hours after the standard period of treatment does not harm the bulbs, but rapid cooling acts deleteriously and may destroy the flower buds. He also contends that whether the bulb has been thoroughly ripened and is dormant is more important than the date on which the hot water treatment is carried out. Mr. Gibson sets out in tabular form the field observations (made in the spring of 1926) concerning forty-nine different stocks of bulbs, representing eighteen varieties, which were submitted to the hot water treatment on various dates in July, August and September, 1925.

Mr. William Morrison. — The recently appointed Assistant Park Superintendent to the City of Birmingham Corporation has had an exceptionally interesting horticultural career in various parts of England and Scotland. Mr. William Morrison commenced his training in 1897 in the beautiful gardens of Brancepeth Castle, Co. Durham, the seat of Viscount Boyne. Here he was employed under one of the most skilful gardeners in the country and was fortunate in receiving a very thorough preliminary training, both out-of-doors and under glass. On the completion of his apprenticeship, Mr. Morrison obtained a position in the gardens at Lambton Castle, the stately home of the Earl of Durham. In those days the Lambton gardens were recognised as one of the finest training grounds for young gardeners and competition was keen when vacancies occurred there; Mr. James Hunter was then the gardener, a position he occupied for over thirty years. Following three years' service in all the departments at Lambton, Mr. Morrison was appointed first journeyman at Douglas Castle, where indoor plants were a special feature and a considerable amount of exhibiting was done in Edinburgh and at other important shows. Mr. Morrison soon proved himself to be a skilful cultivator and decorator, and in due course became general foreman at Douglas Castle, where he remained for six years and left to take up the important position of gardener to Sir Alan Colquhoun, at Rossdhu, Dumbartonshire. Evidence of the great regard in which he was held may be gathered from the fact that on leaving Douglas Castle he received a handsome present from the Earl of Home in appreciation of the services he had rendered. During the two years he stayed at Rossdhu, Mr. Morrison carried out many important improvements, both in the pleasure grounds and in the glass department. At the end of this period the Marquis of Anglesey decided to appoint a gardener at Beau Desert, as he contemplated remodelling these gardens. Mr. Morrison was offered and accepted the appointment and carried out many extensive schemes of improvement during his ten years of service. These improvements included the remodelling of the pleasure grounds, transplanting many large trees and shrubs, the planting of thousands of Rhododendrons, the construction of a Rose garden, of a rock and water garden, tennis courts and an entirely new kitchen garden five acres in extent. His services were especially recognised by the Marquis and Marchioness of Anglesey who presented him with some valuable silver plate in recognition of the excellent work he had accomplished. In 1915 Mr. Morrison "joined up," and served on the western front as an N.C.O. from 1916-1919. He was severely wounded in 1917. When demobilised in March, 1919, he returned to Beau Desert in his former capacity, but, unfortunately soon afterwards the Marquis of Anglesey decided to sell the estate and close down the gardens. This led Mr. Morrison to take up public gardening, and in January, 1920, he became Superintendent of Summerfield Park at Birmingham. This position entailed also the supervision of several of the smaller parks and recreation grounds, and he carried out all his duties so thoroughly that, as already stated, he was appointed Assistant Superintendent of the Birmingham Parks in succession to Mr. J. Smith, who was promoted to be Superintendent.



MR. W. MORRISON.

New Park for Dresden.—A mansion with a garden, known as the Johann-Georg garden, has just passed by purchase into the possession of the Dresden municipal authorities, and it is intended on a part of the ground to erect a Hygienic-Museum. The inhabitants of the town are greatly relieved that this beautiful garden is to be preserved for the public, as there was at one time a possibility of its being used for building purposes. As it is close to the already existing Grossen Garten, swimming baths, exhibition grounds, etc., it will form yet another feature of the great "health centre" of which Dresdeners are rightly proud.

Gold Medal Rose in U.S.A.—The American Rose Society has awarded its Gold Medal to the variety Agnes, which was raised at the Canadian Experimental Farm, Ottawa, by Dr. William Saunders. The new variety is said to be a beautiful pale yellow Rose with outer petals of delicate creamy salmon hue and the blossoms are produced in great profusion. They are fragrant but the variety only blooms but once in the season. It is said to be a variety of great hardiness, unique and attractive in its colour and very early; because of these good qualities it is expected to be very popular in Canada and the United States.

Future of Covent Garden Market.—Many of our subscribers will have read with interest the remarks of Sir Arthur du Cros, the Chairman of the special Covent Garden Market Committee of the Beecham Estates Company, at the annual meeting of the company held in Covent Garden on September 29. Those who are acquainted with Covent Garden Market are aware that for many years past it has been faced with two growing problems—that of insufficient space for the commodities handled, and of inadequate traffic facilities. The latter problem is acute, owing to the fact that the general traffic of the district is intensely congested. Sir Arthur observed that Covent Garden could not be regarded as a local, or even as a Metropolitan market; it was a national pool where buyer and seller met, and the service the market rendered was a national one, of pre-eminent importance to the whole of the trade of the country. An institution designed some two-and-a-half centuries ago could not be expected to fulfil the needs of to-day unless it were given the fullest opportunity of extending and developing with the times. The Directors were quite specific in deciding a year ago to remove Covent Garden rather than to continue and extend it in its present position, a course which would only perpetuate and aggravate traffic difficulties which were already becoming more and more acute. The members might ask why the problem was not dealt with before. The answer was that no move could be made until there was a place to move to, and that they were more fortunate than their predecessors in obtaining one. The site of the Foundling Hospital was opportunely available, and in that site the members of the Committee found what they considered to be the only vacant and suitable place in London which was sufficiently central for the purpose. The first refusal of this important property was accordingly negotiated by the Directors, but it would be obvious to everyone that the matter could not be allowed to remain open indefinitely. The question was, however, still open to reconsideration if a suitable alternative site should present itself. The chief aim in removing the Market was to assure an area sufficient to meet the ever-expanding growth of the business, to obtain better and quicker transport facilities, and to take such measures that the normal traffic of the district selected should not be unduly affected by the magnet of a great distributing market. He added that differences of opinion still remained to be adjusted between the company and some of their tenants who preferred that Covent Garden should remain where it was, and should be modernised and extended to meet its growing needs. If the Directors could be convinced, even now, of the desirability of such a scheme, they were still open and free to consider it; but they were satisfied that the interests of all concerned would be best served by removal to a more spacious site.

"Mother's Day" in Belgium.—A delegate meeting of horticultural societies in Belgium, is to be held at the State Botanic Garden, Brussels, on Sunday, the 17th October, to consider the question of instituting a "Mothers' Day" in Belgium. The custom is already well established in America and in several European countries, the idea (which, needless to say, has emanated everywhere from the horticultural trades) being to cultivate the habit of sending flowers to one's mother on a certain day in every year. In most countries the day fixed has been during the month of May.

Ribes speciosum.—In the issue of *The Gardeners' Chronicle* for February 13, 1926, Mr. A. T. Harrison, of Culzean Castle Gardens, expressed the view that Ribes speciosum rarely fruited in this country. In a subsequent issue Mr. F. C. Puddle stated that the shrub fruited regularly at Bodnant and now, in proof of this assertion, he has sent us fruiting sprays. Unfortunately, many of the elonged, hairy fruits had fallen from the twigs during the journey by post, but it was evident that this native of California, discovered by Menzies in 1703, produces an abundance of fruits in Lady Aberconway's famous garden at Bodnant, Tal-y-cafn, North Wales.

Monday Closing of Paris Flower Market.—Great indignation is being expressed by the horticultural interests in Paris at the action of the Prefecture of Police in instituting a weekly (Monday) closing of the Flower Market. The Syndical Chamber of Paris Florists was one of the first organisations to protest against the measure, and it would appear that condemnation of it is general throughout the trade. The subject is freely discussed in an article in our contemporary, *L'Horticulture Francaise*, in the course of which it is ironically suggested that the Prefect of Police would have been wise, before issuing his decree closing the flower market on Monday, to make an order forbidding anyone to die on Saturday or Sunday and so necessitate the procuring of fresh flowers for wreaths on Monday, and also strictly to forbid nurserymen to cultivate any flowers likely to bloom on that day! Doubtless the Prefecture has solid reasons which were duly weighed before taking such drastic action, but it is easy to understand that, especially in warm weather, much loss might be occasioned if flowers arriving exactly in condition had to wait twenty-four hours before being dealt with.

Appointments for the Ensuing Week.—MONDAY, OCTOBER 11: United Horticultural Benefit and Provident Society's meeting. TUESDAY: October 12: Royal Horticultural Society's Fruit show (two days); Jersey Gardeners' Society's meeting. WEDNESDAY, OCTOBER 13: Wimbledon Gardeners' Society's meeting. FRIDAY, OCTOBER 15: Association of Economic Biologists meet; Manchester and North of England Orchid Society. SATURDAY, OCTOBER 16: British Mycological Society's foray with Essex Field Club at Epping Forest.

"Gardeners' Chronicle" Seventy-five Years Ago.—*Awards at Floricultural Exhibitions.*—As societies are now arranging their schedules for next season, it may be well to mention that wherever competition exists with greatest warmth, there is sure to be found that judicious regulation (framed by the late Metropolitan Society) of rewarding at least two-thirds the number of stands staged, and so graduating the value of the prizes, that a small percentage shall alone separate the first from the second, or the eighteenth from the nineteenth, as the case may be; the battle is for place, and not for profit. A silver cup fails to induce that display which its cost, judiciously offered, is certain to effect. Taunton, Southampton, Camberwell, Thornbury, have all failed this season in gathering numbers, compared with those at Notting Hill, Highgate, Stoke Newington, Salisbury, Shacklewell and Slough, etc., localities in which it is universally known the two-third system prevails. Does not this afford a practical lesson, which it would be well for committees and councils to commit to memory? What flower annually maintains the amount of patronage that is bestowed on the Dahlia? Even the Carnation and Picotee fall short, popular though they be. Shall we live to see the day when our summer exhibition tables will give quarters to whole armies of Pelargoniums? A plant infinitely less expensive to cultivate than autumn's king. A few square feet of glass enables the Pelargonium grower to give place and shelter to those marvellous masses of bloom familiar to all who visit our metropolitan exhibitions. How they are produced, few as yet understand; while for Dahlias whole acres are often devoted to their cultivation. But to effect any revolution in flower showing our warning is, multiply the number of prizes, and lessen the fall in value from first to second, and from second to third, and reward at least two-thirds of the collections staged; then we shall have occasion to remark Pelargoniums for the million, and their production not confined to some three or four, the extent to which their cultivation has for years been limited. *J. E., Gard. Chron., October* 11, 1851.

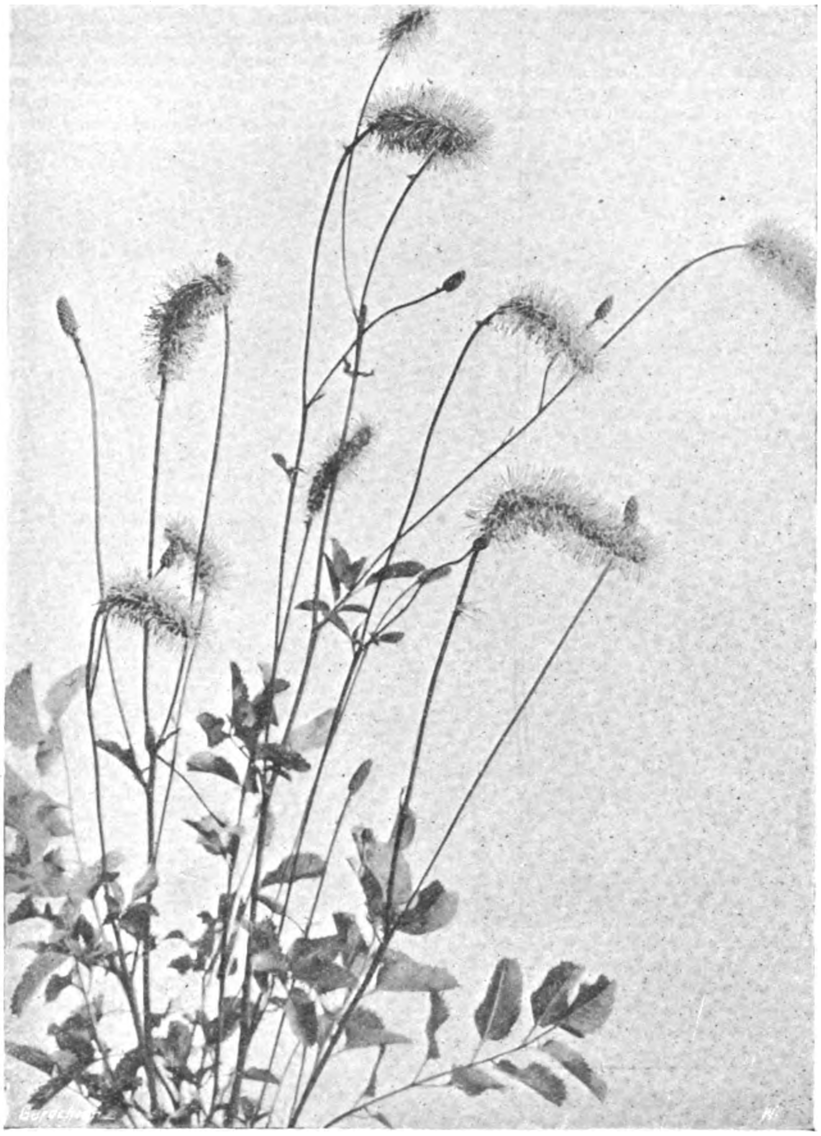


FIG. 131.—POTERIUM OBTUSUM.

(see p. 286).

Publication Received.—*Violet Culture for Pleasure and Profit:* by F. E. Dillistone; Ernest Benn, Ltd., Bouverie House, Fleet Street, E.C. Price, 2/- net.

The Week's Work.

THE ORCHID HOUSES.

By J. COLLIER, Gardener to SIR JEREMIAH COLMAN, Bart., Gatton Park, Reigate, Surrey.

Shading.—The bright, warm weather during the first three weeks of September was ideal for all sun-loving Orchids and should have caused the plants to build up strong, solid growths that may reasonably be expected to produce satisfactory spikes and flowers. With the shortening days and decreasing influence of the sun much less shading will be needed. In this respect a great deal depends on the aspect of the house and arrangement of the occupants, also on the genera to which the plants belong. The chief aim of the cultivator should be to make the most of the sunshine at this season. By the end of September the foliage of most Orchids should be sufficiently hard to need but little protection from the sun and the blinds will only be required during the middle hours of the day when the sun shines very brightly, and then should not be drawn down longer than is necessary.

Temperatures.—It is no uncommon occurrence during October for morning frosts to occur suddenly without the slightest warning, and in such cases the temperatures of the various divisions may be allowed to drop a few degrees below the normal. Neither watering nor damping the bare spaces should be done before the proper degree of warmth is reached, as the drier the atmosphere is under such circumstances the better for the well-being of the plants. The temperatures may range as follow: East Indian or warmest house, 65° to 70° at night; that of the Cattleya house, 60° to 65°; intermediate or Mexican house, a few degrees less; the Odontoglossum house about 55°, with a rise of from 5° to 10° by the middle of the day in each division.

Watering.—This is always an important detail in Orchid culture and especially at this season. Water should now be afforded the plants less frequently in each house, and most Orchids should be allowed to dry out a little before water is applied. But those that are sending up their flower scapes must not be allowed to suffer from drought at the roots, and the same care must be taken with those that are growing actively. Others that have completed their season's growth should be afforded just sufficient moisture to keep their pseudo-bulbs plump, for every care should be exercised to prevent them starting into growth prematurely.

THE KITCHEN GARDEN.

By F. STREETER, Gardener to LORD LECONFIELD, Petworth Park, Petworth, Sussex.

Salads.—To maintain a daily supply of salads throughout the winter requires considerable forethought and attention on the part of the grower. Lettuces in frames must be watched and air admitted on all suitable occasions, for damp is a great trouble and leaves infected need to be removed at once. Stir the soil lightly once a week. In cold districts it may be found necessary to transfer plants that are just forming heads to frames; they should be lifted with good balls of soil and well-watered when planted. Mustard and Cress should be sown in boxes weekly and grown in a cool house for the present. Radishes are better grown on a slight hot-bed, allowing about five weeks to bring them to maturity at this season. Water Cress growing in beds should be cut over occasionally to keep up a fresh supply of young shoots. Endive should either be blanched where it is growing or brought into a dark forcing house having an even temperature. Onion seeds should be sown in boxes and the seedlings raised in heat according to the demand. Dandelion and Chicory should be lifted from the open ground and allowed to develop heads in a forcing house as required. In many establishments Mint and Chives are in daily request, and sufficient quantities of these herbs should be forced into growth to supply the needs. The great thing is to see that there is no break in the succession.

Tomatos.—The fruits are setting well on plants intended for winter cropping and great care is required to keep the plants healthy and in a good growing condition. Do not use too much fire heat and admit air very carefully. Do not give the roots too much nitrogenous manure and hand-pollenate the flowers. Remove any misshapen fruits and do not permit too many berries to a truss, rather ensure an even crop that can be reasonably expected to finish well. Pinch out all side-shoots so soon as they can be seen. A pinch of seed may be sown now and the seedlings raised in a temperature of 55° to supply plants for very early fruiting next season.

THE FLOWER GARDEN.

By F. C. PUDDLE, Gardener to LORD ABERCONWAY, Bodnant, Taly-Cafn, North Wales.

Hepaticas. — The early-flowering Anemone Hepatica is a shade-loving plant which has a reputation of transplanting badly, and success in replanting is usually a matter of method. The present is the best time to carry out the operation. If fresh stock is required, strong clumps should be obtained from a reliable source, for small, dry roots are useless. When lifting large clumps it will be found that although the roots penetrate the soil fairly deeply, those near the surface are the most vigorous, and care should be taken not to bury these too deeply. In addition to this a flat stone should be placed vertically in the ground so that it is hidden by the soil, and the plant placed firmly against it. If examined a few months after planting, the stone will usually be found to be covered with a mass of healthy, green-tipped roots. I have planted many Hepaticas by this method and the losses have been practically nil.

Bedding Plants.—With the advent of October it will be necessary to make preparations for housing the more tender bedding plants, but much depends on the climate of the district as to the exact time when this becomes essential. Cannas, Begonias and such like plants will require lifting and gradually drying off in preparation for storing. Fuchsias and similar plants may, after potting, be placed in a cool fruit house until they become established, when they may be stored in dry, frost-proof quarters. Heliotropes require more careful treatment, and any that have to be lifted and potted, should be placed in a warm, shaded house and syringed freely for a time to encourage root action before they can be safely transferred to a cool house. Dahlias may be left until the first frosts disfigure them, as they will often keep the garden bright until well into November.

HARDY FRUIT GARDEN.

By W. AUTON, Gardener to VISCOUNT ELVEDEN, Pyrford Court, Woking, Surrey.

Peaches and Nectarines.—There are many reliable varieties of these fruits to select from, the earliest ripening their fruits about the middle of July, while others keep up the succession till the end of September. For planting out-of-doors the following sorts may be considered dependable and suitable for maintaining supplies during that period: Peaches: Duke of York, Hale's Early, Peregrine, River's Early York, Libra, Dr. Hogg, Crimson Galande, Dymond, Noblesse, Royal George, Barrington and Princess of Wales. Nectarines: Early River's, Lord Napier, Dryden, Pine Apple, River's Orange and Humboldt. Care should be taken to procure the trees from a source where reliance can be placed on them being true to name, free from disease and on the right stocks. The modern fruit-tree-raiser pays special attention to stocks and uses those which experience has shown to be the best for the several purposes.

Storing Fruit.—Although the harvesting of a few late varieties of Apples and Pears still claims attention, the dry weather of the past month has, in some cases, accelerated the ripening of the fruit, and very little will now remain ungathered. The late varieties should be left hanging so long as practicable, and it is frequently necessary to go over the trees two or three times, gathering the ripest and leaving the remainder for a few days. Apart from the fact that a considerable portion of the crop has been pecked by birds or punctured by various insects, making it useless for storage, there are signs that some varieties will not keep very well, and a sharp watch should be kept in the fruit room to remove immediately any decaying fruits to prevent further losses. As a general rule more fruit decays in the first week or ten days after gathering than for many weeks afterwards, hence the necessity of carefully looking over the stores in the early days.

Figs.—Fig trees on walls are finishing their crops and the fruits should be exposed to all the light and sun possible. Where the trees have made much wood care should be taken that the shoots are trained sufficiently thinly to enable them to become well-ripened or they will not easily withstand winter frosts. Luxuriant growth is not a desirable condition for the successful fruiting of Figs. It generally arises through the roots penetrating into rich soil, and where this has happened steps should be taken now to restrict the rooting area. This may best be done by digging a trench about three feet from the wall and filling it with clinkers or similar material, well-rammed. Trees restricted to small borders usually make short-jointed wood which matures well and fruits satisfactorily.

FRUITS UNDER GLASS.

By T. PATEMAN, Gardener to SIR CHARLES NALL-CAIN, Brocket Hall, Hertfordshire.

Figs.—Early Fig trees should by now be cleared of their second crop of fruit, and where the few remaining Figs have not yet ripened it will not be advisable to employ much fire-heat to hasten their ripening. Where attention has been given the trees in regulating their growth very little thinning of the shoots will be necessary but should the growths be crowded, thinning of the same should be done at an early date. By doing this now the remaining growths will have the full benefit of the sun to mature next season's fruiting wood. Fig trees trained near the roof-glass are very liable to attacks of red spider and other insect pests, and means should be taken to destroy as many of the pests as possible by syringing the trees with an insecticide before detaching the branches from the trellis. In the meantime, and until the leaves have fallen, it will be wise to syringe the trees in the forenoon of fine days and ventilate the house to its fullest extent both day and night. This cool treatment should assist materially to ripen the young shoots that are to produce next season's crop.

Successional Figs.—Houses in which the second crop of fruit is still ripening should be kept slightly on the dry side and only sufficient fire-heat used to keep the atmosphere comparatively dry, for at this season of the year fruits are best obtained in a dry, ventilated house. Trees growing in a cold house, that have been allowed to develop only one crop of fruit, should receive every encouragement to ripen up their young shoots that are to produce next season's crop. Where the trees are comparatively free from insect pests very little syringing should be done, and, if necessary, only on sunny days, as every endeavour should be made to ripen the wood of late trees. All established trees growing in borders should now be watered carefully, erring on the dry side rather than overwatering the borders at this season of the year. Remove all unnecesary growths to admit as much sunlight and air to the branches as possible.

PLANTS UNDER GLASS.

By John Coutts, Assistant Curator, Royal Botanic Gardens, Kew.

Agathea coelestis.—Although this plant may be had in flower more or less all the year round, it is specially useful at this date for furnishing the stages in the greenhouse or conservatory. The beautiful blue flowers and neat habit of the plant are especially pleasing. Although this Agathea may be rooted from cuttings at almost any time, the present is the most suitable time to insert a batch of cuttings. to provide flowering plants for next year. The cuttings will root readily in a case in a cool house. The plants grow freely in any good potting compost and only require cool greenhouse treatment during all stages of their cultivation, in fact, plants meant for autumn and winter flowering are best stood out-of-doors during the summer.

Agapetes buxifolia.—This beautiful cool greenhouse plant may be easily propagated by means of cuttings inserted now. The cuttings should be formed of half-ripened shoots and rooted in pots of sandy peat, standing the pots in a close case or under a bell-glass in a cool greenhouse. This plant succeeds best in a compost composed of equal parts turfy loam, peat and sand, and although it is not essential, charcoal serves to keep the compost open and in good condition. Ample drainage is also important. Although this plant may be grown in pots, it is perhaps seen at its best when planted out in a well-drained bed or border in a cool greenhouse.

Clerodendron Thomsonae.—Specimen plants of this Clerodendron in pots should be kept somewhat dry at the roots during the winter and grown in a lower temperature than heretofore, but care must be taken to not dry them off too much or let the temperature fall below 55°. Early in January or February, according to requirements, they should be placed in a higher temperature and afforded more water at the roots. When they have started into growth they should be repotted or top-dressed according to requirements. In the case of plants that are planted out in the stove, although it is impossible to remove them to cooler quarters, they may be rested by keeping them drier at the roots.

Allamandas.—Specimen Allamandas in pots or tubs should be treated in the same way as advised for Clerodendron Thomsonae. No pruning should be done at this stage beyond cutting out weak growths and slightly shortening the long, straggling shoots.

Dipladenias.—Although really evergreen, Dipladenias should be kept drier at the roots during the winter, but care must be exercised in this respect, as it is very easy, especially with young plants, to overdo it and kill them. A temperature of 55° to 60° is necessary for the plants during the winter. Unfortunately, this beautiful class of stove climber is seldom seen at the present day.

FOR NORTHERN GARDENERS.

By A. T. Harrison, Gardener to the Marquis of Ailsa, Culzean Castle, Maybole, Ayrshire.

Storing Root-crops.—Late Potatos still in the ground should be lifted during dry weather, and after removing small or diseased tubers, stored either in frost-proof sheds or in pits or clamps lined with straw and covered with several inches of soil. Late Carrots should also be lifted and stored in sand. Do not make the Carrot clamps too deep, as the roots have a tendency to heat if stored in too large a bulk, and plenty of sand should be placed amongst them to keep the different layers apart. Beets are also ready for lifting, and they should be dug up with great care in order to prevent breaking, and the tops left about two inches long. In covering all root crops stored in clamps it is advisable to leave the ridge of the clamp open for a week or two, and only finally finish it off when compelled to do so by the advent of frosty weather. This plan prevents the roots from overheating and also allows them to dry, under which conditions it will be found they keep very much better.

Spanish Iris and May-flowering Tulips.—The bulbs of these should now be planted to ensure a display next May and June. Both are indispensable where cut flowers are in constant demand and, being comparatively cheap, they should be planted by the thousand, as if care is taken this outlay is not an annual one, the bulbs remaining and flowering profusely for a number of years. Some growers lift May-flowering Tulips each season, but this is not necessary, as they succeed for several seasons without disturbing them, where the soil and other conditions suit them. In planting on stiff or clayey soils it is advisable to work in a quantity of sandy soil, or old potting material, under and around the bulbs, placing the latter from three to four inches deep.

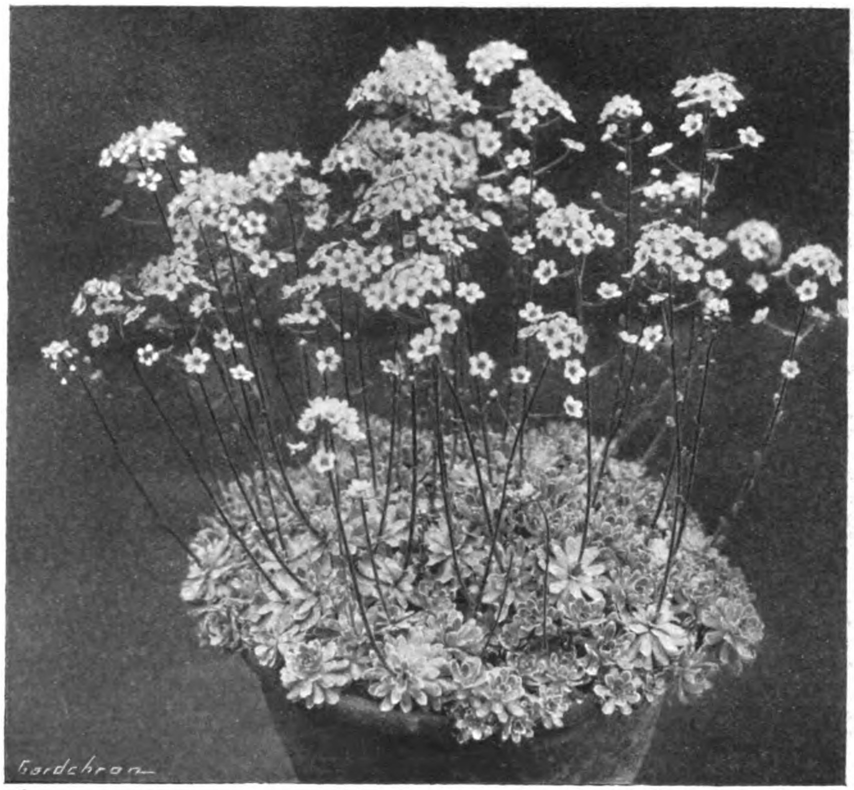


FIG. 132.—SAXIFRAGA AIZOON.

(see p. 286).

Hippeastrums.—These bulbous plants have now completed their growths and in most cases will have ripened off naturally, so that their resting time is evident. They should be kept dry for three or four months from now, and an overhead shelf where they are secure from drip is as good a place as can be selected for keeping them. Seedlings should not be ripened off their first season, but kept growing steadily, as they take a few years under ordinary treatment to reach flowering size. With these as with most other plants of a like nature it is advisable to procure only the very best seed obtainable, as the time and trouble entailed in raising them is exactly the same for a poor strain as for those of first-class quality.

Nerines.—Although a member of the same family as the Hippeastrum, the Nerine requires a season of rest at a different period of the year, and as the plants have just passed out of flower, the present is a suitable time to divide and repot them, if that is necessary. Like most members of their order, however, they flower most satisfactorily when their pots are filled with roots, and they may be grown in the same pots for a number of years without disturbance if fed with diluted liquid manure during their growing season. Keep them growing steadily during the winter and spring, and when, probably during April, they show signs of resting, treat them as advised at the present time for Hippeastrums, keeping them quite dry till August, or until the new flower-spikes begin to develop.

Winter-flowering Plants.—Plants of winter-flowering Begonias, Gesneras, Saintpaulias and others of a like nature should now be exposed to all the light available in order to prevent them becoming drawn. Fire heat should be used to keep them in a growing condition, but plenty of moisture in the atmosphere is required to keep them healthy and free from insects. None of these plants require an excessively high temperature; between 55° to 65° will be found ample for their needs.

Michaelmas Daisies.—The marked improvement in these perennial Asters during recent years has done much to popularise them, and while they are extremely useful in a cut state their real value is found in brightening up the borders at this late season. The dwarfer varieties, which include A. Amellus, are not more than two feet in height and do not require staking. They are useful subjects for planting in the front row of borders. Some of the choicest varieties are King George, Beauty of Ronsdorf and Preziosa. The graceful A. ericioides has also been greatly improved, and such varieties as Ringdove and Maidenhead are most charming. Among the taller varieties of Asters, Climax still holds its own as a large-flowered variety, while Beauty of Colwall and Cloudy Blue are good sorts of the semi-double-flowered varieties. Those who have seen the newer Barr's Pink are charmed with it.

ALPINE GARDEN.

SAXIFRAGA AIZOON.

When this pretty plant is grown in pots or pans under glass it flowers in June. It belongs to the encrusted section, but, unlike S. Cotyledon, S. pyramidalis or S. longifolia, needs little attention in its cultivation, as it will almost grow anywhere, and is quite hardy.

The specimen illustrated (Fig. 132) is two years old and growing in a pan eight inches wide and five inches deep. The method adopted to get this result was very simple; when breaking up an old plant rosettes of equal size were selected and pricked out into the pan in a light garden soil, the pan being well-drained with potsherds. The rosettes were encouraged to develop as many growths as possible. That this treatment did not interfere with the free-flowering qualities of the species is obvious as the specimen developed over three dozen spikes, and many spikes bore more than twenty flowers. Even when not in flower the silvery, encrusted rosettes of S. Aizoon are beautiful. *Mark Mills, Coombe House Gardens, Croydon.*

LEWISIA TWEEDYI.

Lewisia Tweedyi is an uncommonly beautiful plant for the rock garden of for the alpine house, but it is also, unfortunately, a rare species in cultivation, and at the same time, either rare or of very rare local occurrence (probably both) in its native home, California. For long it has been usual to depend for stock upon imported roots of this plant, and supplies came almost, if not quite, exclusively, from one collector in California. But now, for the time being at any rate, that source of supply has dried up. I had a letter recently from this Californian collector saying that sheep had invaded the Lewisia Tweedyi country and have eaten up all the wild plants, so that he can no longer send roots to England. But this calamity is not so lamentable, to me personally, as it might have been, for here at Stevenage we have succeeded during the last two seasons in harvesting a good crop of L. Tweedyi seeds and raising a fine batch of vigorous seedlings. Needless to say, home-raised seedling plants are in every respect superior to plants which have been dug up from the wild, and have endured trials of two or three weeks' travel in close confinement.

There has always clung around this lovely plant grave doubts as to its absolute hardiness, but experiment last winter taught me to regard it with a good deal more confidence than I had formerly done. Last autumn I planted out a young, home-raised plant of L. Tweedyi in a crevice in the rock garden here, and last winter it withstood over 30° of frost without the least distress. I put it in a narrow crevice, facing due east, in light, rich soil. The position was well-drained but fully exposed to wind, rain, frost, sun and snow, and I gave it no protection of any kind. My plan was to give it a full and severe test for hardiness, and that it certainly got.

The roots of L. Tweedyi are long, fleshy and thong-like, and the plant forms a broad, flat rosette of thick, fleshy leaves, six to nine inches across. From among these there appear in May a number of flower stems, two or three inches long, and each carrying from one to three very large blossoms, waxy in texture, rather like single Roses in colour—a most lovely and delicate salmon-pink, like an exquisite Tea Rose of unusual texture.

I think it is the most beautiful of all the Lewisias, not even excepting L. Howellii. If given a suitable position, such as I have described I do not think anyone need hesitate to try it in the open, if their garden lies anywhere south of the Thames. Stevenage, of course, is well to the north of the Thames, and is an uncommonly cold spot. In worse climates than ours it might be safer to grow it as an alpine-house, or cool-greenhouse plant, and for this purpose I recommend an extra deep pot to accommodate its great, thong-like roots. *Clarence Elliott, Stevenage.*

SAXIFRAGA AQUATICA.

Though given similar conditions to those enjoyed by S. aizoides and other moisture lovers, this Pyrenaean species only does moderately well. Once or twice it has made a fair show here of its stout, upright flowering stems, which are crested with large, milk-white blooms, but more often it is in a state of that rusty decay into which many mossy Saxifrages are apt to fall during wet weather at any season.

The plant appears to need more sun than it gets in this country, and a root-run which is moist, yet perfectly drained. In any event, the very large rosettes, five inches to six inches across, of pale green, deeply-cut leaves, silvered with fine hairs, and the noble inflorescences, make the plant well worth much perseverence with it. *J.*

WATER GARDEN.

POTERIUM.

Poteriums should be planted wherever there is natural or informal water in a garden with sloping banks that give semi-bog conditions. The tall, vigorous yet uncommonly elegant Poterium canadense is frequently catalogued under the name Sanguisorba canadensis, but there is a Poterium Sanguisorba which is a vastly different plant from P. canadense. Usually its height is quoted as four feet, and sometimes, when the season is dry, that is about correct, but this year, when most plants have made particularly luxuriant growth, I have seen P. canadense a good deal over six feet, and that among ordinary herbaceous border plants, not by the water's edge. The fact is, although Poteriums do succeed well and are perfectly adapted for bog planting they are accommodating, and will succeed in an ordinary border, except where the soil is powder dry for the greater part of the summer.

P. canadense has large, highly ornamental pinnate foliage, and the flower heads are large enough to be in conformity with the proportions of the stems and foliage, but are so light and fluffy in appearance that one feels compelled to remark upon their elegance. The petals are tiny and nestle close to the stalk, but the stamens are like silken threads, protruding to give the spikes the appearance of bushy tails. They are ivory-white, and last quite a long time either cut or on the plant. The flowering season begins in July and extends to the end of September.

P. obtusum (Fig. 131) is of shorter growth, varying according to environment from two feet to three feet high. The colour is usually described as rosy-pink, but it is subject to considerable variation of shade. I have seen it on chalky soil pale enough to call it flesh-pink, while on strong loam in which iron is present, as, for instance, in Warwickshire and in some districts in Wales, Poterium obtusum becomes almost carmine. It is that rich, full rose which makes the plant wonderously beautiful, and it is worth while affording it some iron, either in the form of an occasional sprinkling of crushed iron sulphate or of iron filings dug in before planting. It is prudent, when the only accommodation is an ordinary herbaceous border, to bury some cow manure under the roots, and to incorporate in the top spit something of a spongy, absorbent nature, which in the case of light soil may be good fibrous turf loam, and on heavier soils peat or moss litter. It is not that the plant is difficult or of uncertain vigour, but simply that the difference between the mean average and the extra quality obtainable is so great that it pays handsomely to give the plant the benefit of a little extra attention to its requirements.

P. sitchense grows about the same height as P. obtusum, but its flowers are of a purplish hue, and a really more beautiful species is P. tenuifolium, of slender growth, finely constructed foliage and tasselled, white flowers. *M.*

HARDY FLOWER BORDER.

A GOOD AUTUMN DELPHINIUM.

Great is the pity that a large proportion of modern Delphiniums are spoiled for autumn-flowering by accepting the rôle of host plants for common mildew which ruins both flower-spikes and foliage. A few varieties appear to be immune to this common disease, and one is disposed to suggest they should be starred in catalogues as "immune" varieties, and furthermore, breeders should concentrate on producing immune varieties only.

A splendid batch of the variety Pannonia arrested my attention when, past the middle of September, I saw it carrying plenty of bloom at Mr. Taylor's nursery, Bracknell; the plants were quite clean and healthy, although growing beside plants of other varieties which were absolutely white with mildew. Pannonia is a good variety for the garden, and would also be better than many for cutting, and at the time of the autumn crop Delphinium spikes, if they are clean and of clear, decisive colour, make extremely decorative material. The colour of Pannonia is Belladonna blue; it closely resembles the tone of the old but very lovely Delphinium Belladonna. It is of moderately large size, and the flowers are well set on the spike. In the centre of each blossom is a small but very pure white cushion, sometimes four-pointed, sometimes triangular, and the contrast with the blue is strikingly effective. Pannonia is well worth planting if only for its autumn blooms.

PAPAVER PILOSUM.

Taking its specific name from the downy hairs with which its handsome leaves are covered, this Poppy has merits unknown to many garden owners, otherwise it would be extremely difficult to explain why it is not grown more plentifully. It was a favourite flower of mine when first I laid claim to be owner of a little patch in the parental home garden, so excuse cannot be made that it is too new to be widely known. A reason has occasionally been tendered for its absence from herbaceous borders that the foliage takes up a deal of space while its flowers are rather small, yet the fine, spreading rosette of downy leaves is far more ornamental than the rough growth of an Oriental Poppy, and although the flowers are somewhat small, they are freely produced over a very long period are extremely graceful, poised on long, slender stems, and are of a colour such as no Oriental, or even Shirley Poppy can surpass. Its particular shade has been variously described as orange-buff or pale terra-cotta, but whichever is nearest it does not convey the true impression of its watered silk or crumpled satin sheen which gives the flower a wonderful radiance. It is a plant that flowers better on a rather poor soil than when richly fed, but it must have deep cultivation for its long, whipcord roots.

Papaver pilosum reproduces itself true from seeds, but occasionally a plant will develop flowers of broader diameter or richer colour than the average. Such should be marked for perpetuating, and when three years old the plant may be lifted carefully, and its thick thong roots cut away for the purpose of making root-cuttings by means of which stock of the same quality may readily be increased.

The late Rev. C. Wolley Dod raised a beautiful hybrid by crossing P. pilosum with P. rupifragum, which for awhile was grown in hardy plant nurseries as P. pilosum hybridum. It was an exceedingly fine plant with chaste flowers of shining orange-salmon. The plant bore a prodigious quantity of bloom which lasted well when cut, if the ends of the stalks were sealed by dipping in scalding water. For some few years I have lost sight of this fine plant which I trust has not been lost to cultivation, and would be glad to obtain possession of again. *A. J. Macself.*

[Papaver pilosum is illustrated in *The Botanical Magazine*, t. 4749; Nicholson is in error in stating in his *Encyclopaedia of Horticulture* that the *Bot. Mag.* illustration is given under the name of P. nudicaule.]—Eds.

INDOOR PLANTS

HEERIA ELEGANS.

This is the best known species of a small genus commemorating Oswald Heer, a celebrated Tunis botanist of the nineteenth century.

H. elegans is a very bright and attractive prostrate or semi-prostrate plant for growing in the cool house. The terminal and compound panicle is composed of numerous flowering branches, each forming a corymb of rose-coloured flowers, individually nearly one inch in diameter; the leaves are opposite, elliptical and entire, tapering at the base into a comparatively long petiole.

The plant flowers over a very long period; it succeeds in a compost of loam and peat and is delightful when sprawling over a pan or large pot.

Propagation is effected by cuttings of the young shoots in spring. The Heerias inhabit the mountains of Mexico and Central America and have been referred to the genus Heterocentron.

MANDEVILLA SUAVEOLENS.

This interesting and very beautiful climbing plant would appear to be a little fastidious in its requirements, for one rarely sees it in great luxuriance. In some favoured parts of the country it may be accommodated in the open, but it is usually regarded as a plant suitable for the conservatory or cool greenhouse.

It should be planted in a border of peat and loam, with good drainage; it is a deciduous plant of somewhat spare growth and may be trained to a rafter or pillar.

The flowers are pure white, large, and deliciously fragrant; when the plant is doing well, flowers are produced in great profusion over a long period during the summer. The leaves are opposite, cordate-oblong and dark green in colour.

Cuttings of half-ripened side-shoots offer the best method of propagation. M. suaveolens was introduced into England from Buenos Aires in 1837, and is figured in *Bot. Mag.* t. 3,797. *Ralph E. Arnold.*

PYCNOSTACHYS DAWEI AND COLEUS THYRSOIDEUS.

Pycnostachys Dawei is a promising addition to winter-flowering subjects for greenhouse decoration. It is remarkably Coleus-like in general appearance, having square stems, opposite, exstipulate leaves and blue labiate flowers. It may be grown and flowered in a lower temperature than Coleus thyrsoideus, but, being a taller grower, is not so suitable for grouping in small structures. Both plants have many good qualities in common and may be employed successfully in combination. Coleus thyrsoideus attracted much attention shortly after its introduction, over twenty years ago. Its glorious colouring in the mass and lovely poise of the inflorescence are a delight during the darkest days of the year. It is somewhat exacting in its cultural requirements; over-potting, too frequent pinching and excess of moisture should be obviated, or the result will be weak plants with thin inflorescences.

Details of culture which have given good results may be briefly mentioned. Insert strong cuttings from cool-grown, rested, cut back plants about the middle of May. Place the cuttings in a brisk heat and when rooted place them in three-inch pots and remove them into a warm, airy greenhouse. Pinch out the points of the growths when the plant is established and finally transfer the latter to pots five inches in diameter. When the roots reach the side of the pot they should be fed frequently with weak liquid manure until the colour shows in the racemes. *Fred W. Jeffery.*

ORCHID NOTES AND GLEANINGS.

BRASSO-LAELIO-CATTLEYA C. W. MATTHES.

Variation in the flowers of different plants raised from the same cross is a natural consequence in hybrids, and it gives an additional interest to the raiser, but whatever the variation in the batch may be, each plant usually has similar flowers.

Brasso-Laelio-Cattleya C. W. Matthes of Messrs. Stuart Low and Co., raised between B.-L.-C. The Baroness and C. Maggie Raphael alba has shown great differences in the several plants flowered, but the blooms of each were uniform until the last, a two-flowered inflorescence of which is sent. In this case the flowers are quite unlike each other, the one having an expanded, crimped and slightly fringed lip showing much of C. Dowiana and with a rose band from the base of the mauve blotched front; the other flower is shaped more like C. Maggie Raphael and with rose-coloured spotting on the front lobes. In both blooms the sepals and petals are bright chrome-yellow.

The flowers illustrated in Fig. 133 were photographed when the variety received the Award of Merit of the Royal Horticultural Society on the 21st ult.

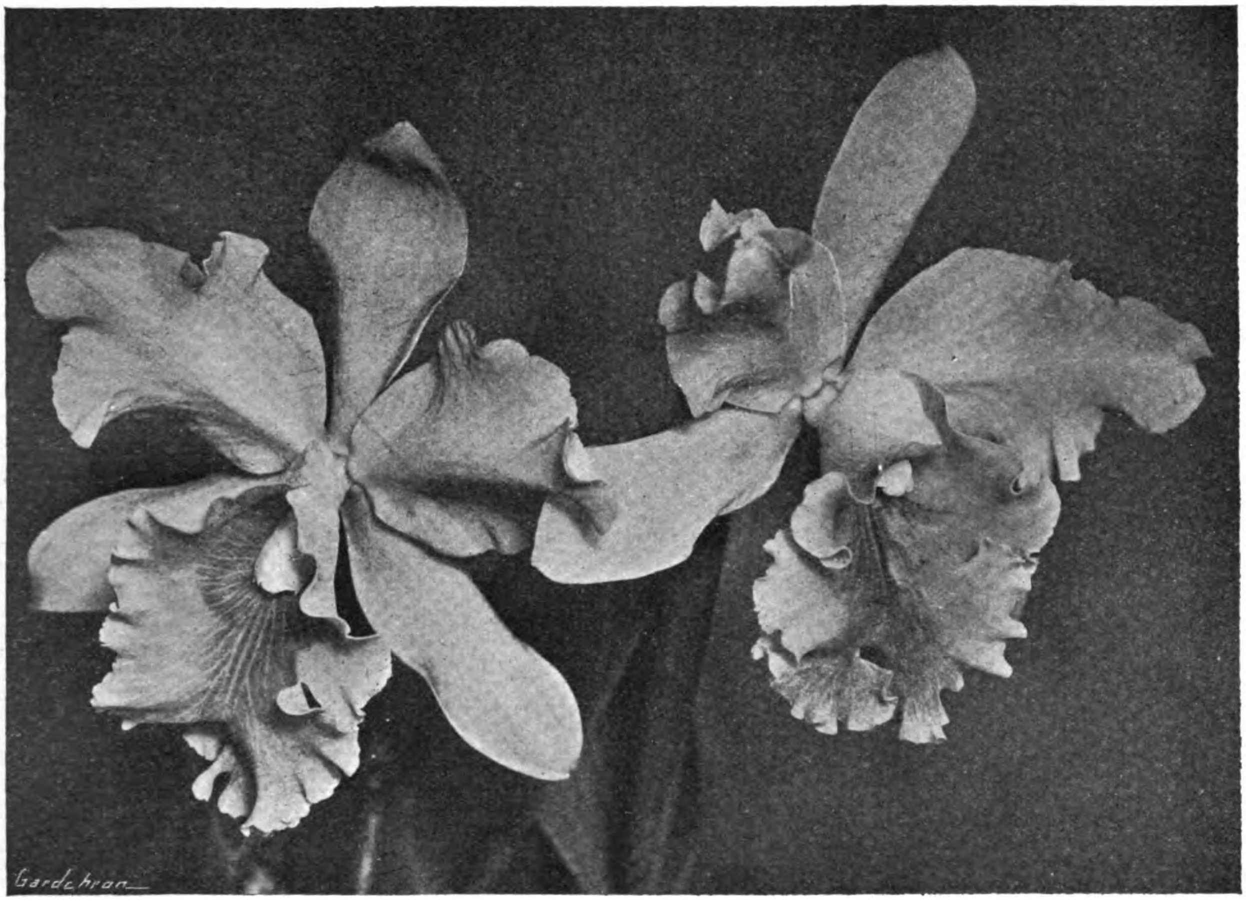


FIG. 133.—BRASSO-LAELIO-CATTLEYA C. W. MATTHES.

R.H.S. Award of Merit, September 21. Flowers yellow and carmine. Shown by Messrs. Stuart Low and Co.

(see p. 254.)

ROSE GARDEN.

THE BEST GARDEN ROSES.

In "Garden Notes from South-West Scotland" in the issue for September 11, Sir Herbert Maxwell recommends a trio of Roses to those who through lack of space must severely restrict their varieties. These are Lady Pirrie, General McArthur and Zéphirine Drouhin—well-tried sorts of great merit with few conspicuous faults. The last named is a Rose somewhat apart, and cannot be considered a bedding variety in the present-day acceptance of the term. It appeared in 1873, is of a continental origin and classed as a hybrid Bourbon. An account of this Rose was given in *Gard. Chron.*, August 30, 1924, p. 149. It is perhaps best grown as a large bush or as a hedge. Its one weakness is its liability to mildew, therefore, in gardens addicted to mildew there should be some hesitation in introducing it, and if planted a policy of isolation had better be adopted.

Lady Pirrie, introduced in 1910, is now recognised as one of the best bedding decorative Roses. It is especially good in the autumn and its glaring tints harmonise with the changing foliage, at a time when the purer pinks look cold and out of place. Its faults are of a minor nature. The flower-stalk could, with advantage, be stronger, and perfume is apt to be lacking, though I was agreeably surprised to find the other day a wild-Rose-like fragrance pervading the air, which I traced to Lady Pirrie. It is one of the few Hybrid Teas which can, when not in bloom, be identified by its leaf.

General McArthur has not yet, I think, been superseded as the best bright red bedding Rose. Etoile de Holland, a recent continental introduction, has been put forward as a possible rival, but it can hardly be held as a true competitor, as it is more to be counted among the darker crimsons. Though fragrant, it is not so heavily scented as General McArthur, and I doubt its capability of making the same splash of colour in the Rose garden. It is, however, a variety of much merit and to date probably the best or one of the best of the deeper reds, as it does not "blue." General McArthur has this defect to some extent.

The new Bedford Crimson though vieing with General McArthur in the matter of fragrance, is yet on its trial, and it is too early to state whether it will oust or seriously compete with this well-tried variety. It hardy will, I think, for the simple reason that it is really a darker Rose.

General McArthur has evidently been valued in recent years alike by both amateurs and nurserymen as one of our foremost bedding Roses, because in *The Rose Annual* it has been placed first in the list of Best Roses for General Garden Cultivation for five years in succession (1918-22). It came eighth in 1923, then first again in 1924, but has had to give way again considerably in last year's analysis. Apparently it finds greater favour in the south than in the north of England.

It is an interesting coincidence that two of the best if not *the* best bright crimson Roses viz., General McArthur and Richmond, appeared in the same year, 1905, and from the same firm, E. G. Hill Co. of America. If the strong points of these two Roses could be combined in one and the same variety, the ideal light crimson bedding Rose would almost be forthcoming. Richmond has not met with good favour as an outside decorative Rose, as it lacks vigour and needs ruthless disbudding to give good blooms. At its best the flower is much ahead of that of General McArthur, as it is of ideal shape, keeps its colour well and when full or overblown is still quite pleasing. In these respects General McArthur is disappointing. With good cultivation and disbudding Richmond is capable of providing a striking Rose bed and one more continuously in bloom than one planted with General McArthur. As a cut flower Richmond is one of the most satisfactory of Roses, and the trade has long recognised this. It is still the leading red Rose of the market, and is very amenable to cultivation under glass. *J. P., Carlisle.*

FORESTRY.

NEGLECT OF BRITISH FORESTRY.

Estates and small properties "To be let or sold," are, unfortunately, to be met with in almost any part of the country, and the neglected condition of the trees and plantations, overgrown hedges and shrubberies, unkempt and grass-grown roads and paths, broken down ditches and fences, and generally untidy appearance of many woodlands is only too apparent. This state of matters has been forcibly brought home to me during the past few years, when visiting some of the best wooded estates in various parts of Scotland and Ireland, where it is sad to see how many noble properties have been shut up or disposed of for building or other purposes, with the finest timber felled and removed, and the cut-over woodlands left in a deplorable derelict condition

As is usually the case, when money is short on an estate, the woods and plantations are first drawn upon, and, too frequently, when the saleable timber has been removed the ruined state of the remaining trees and underwood and general condition of the woodlands are pitiable to behold. Inferior timber-producing trees and saplings that would not pay to cut down have been smashed and injured beyond repair by the careless felling and removing of adjoining trees, branches broken and twisted, bark torn off, ditches choked with soil and leaves and unsaleable timber and heaps of branches left to rot on the ground, engendering insect and fungous pests that cause injury to healthy trees.

Since the war, in particular, many of our home woods have been allowed to go to ruin, the necessary labour for the upkeep of such having been done away with on the score of necessary curtailment of expenses, and the trees sold as they stood, to be felled and cleared by the purchasers' men. This latter method, which has been largely followed with the dismissal of the usual estate woodmen, may appear to be the quickest and most profitable method of disposal, but in the end, it has serious disadvantages in the matter of careless felling and handling of the timber, which operations are usually carried out by contract on the part of the timber merchant, when a great amount of damage is frequently done to the remaining crop of trees, even when a signed agreement to the contrary is entered into between seller and buyer.

The numerous costly litigations that have taken place during the past two or three years on this point prove the difficulty of the situation with regard to any agreement, no matter how carefully worded, that may be entered into with reference to damage in tree-felling and clearing the produce.

In other cases with the wholesale reduction in woodmen and gardeners that has taken place during late years, the grounds and trees have, in many instances, been left to take care of themselves, and, as often as not, trees that cost much money to purchase have been ruined by overcrowding and want of attention. It is also to be regretted that in not a few instances, land that was cleared of its timber years ago, has not yet been replanted, but the fact is that, in the case of many private estates at least, little in this way need be expected for a long time to come. In Scotland, in particular, great changes in the natural beauty of well-known tourist and other resorts have been brought about by the wholesale clearance of woodlands, as, for example, along the banks and at the top of Loch Tay, near Killin, where the originally well-wooded slopes were, until lately, derelict lands, rutted and water-washed, with an odd, felled tree lying here and there, and great heaps of sawdust and appliances for the removal of timber.

In several other parts of Perthshire, as on the Knock and Turlum hills, near Crieff, the appearance of the country side has become entirely changed of late years by the removal of trees with which both were at one time thickly covered. Along the banks of the Dee, especially between Ballater and Balmoral, the wholesale removal of native Pines and other trees has given this beautiful pass a much more open and unfurnished appearance than visitors were used to a few years ago. Further north, the changed appearance of the country districts is even more apparent than in the cases mentioned.

But the condition of many Irish plantations is even more deplorable, for, with the wholesale removal of these, the landscape appearance of several counties has become entirely altered of late years. Fifty years ago, the Churchill property, Co. Armagh, was acknowledged to be one of the best managed estates in Ireland, the woods and plantations being regularly thinned, fences attended to, and hedges annually trimmed, while the collection of rare Coniferous trees was one of the most extensive, and occasionally visited by lovers of trees from all parts of the country. Further north, several demesnes have been sold, the trees, both ornamental and otherwise, converted into timber, and the grounds left in the most pitiable state of neglect. Southwards, too, the same state of matters exist, and the beautiful Criel Temple estate, Co. Louth, where £15,000 was realised for timber alone, has been utterly ruined, through no fault of the purchaser, by the wholesale removal of all the trees, whether useful or ornamental, both having been included in the sale. In other parts of Ireland, similar tree-felling has been going on apace, and to my knowledge, three estates have been stripped of their finest trees, what remains being little less than a lot of valeuless poles that have been sadly broken by careless felling of the heavier trees.

It is a well recognised fact that neglect or indifference in the matter of tree-planting and indiscriminate felling has been quickly followed in many instances by a neglect of fences, hedges, ditches and roads. With the exception of the Scottish plantations referred to, it is questionable whether replanting treeless grounds generally will be taken in hand for a long time to come. To add to the chaos in British forestry the home-grown timber trade is by no means in a flourishing condition, neither demand nor prices being what could be desired. Wages of wood-workers are higher than they have ever been before, while the cost of handling timber, that is removing it from the woodlands to the sawmill, is prohibitive. Take, for instance, the majority of Coniferous timbers; the actual cost of production, is greater than the selling price, while foreign pitwood is being delivered to the South Wales collieries from France at a price that defies competition on our part. Bark-stripping does not now pay, and it is the same with charcoal production, Osier cultivation, and the cultivation of underwood.

To the uninitiated in such matters, it may come as a surprise that timber is delivered at the South Wales collieries from France and other European countries, and in Scotland from the Baltic ports, at cheaper rates than wood of similar quality can be sent from home stations less than one-tenth the distance away.

There are excellent supplies of pitwood in various parts of England and Scotland, but the cost of delivery of such by rail is so prohibitive that growers can import their timber at a much cheaper rate. I have just learnt from one who has been actively engaged in the pitwood trade for nearly half-a-century that from Inverness to the Firth of Forth coal mines the railway rate is fully 19s. per ton, whereas from Finland to the same destinations the actual cost of transit is more than 2s. less. Most landlords cannot now obtain a remunerative price for their smaller and second rate timbers, owing mainly to the high rates that are charged for the carriage, and for this reason hundreds of tons of very fair quality timber trees have either been consigned to firewood uses or left to rot on the ground. Like agriculture, the home timber trade and wood-working industries are greatly in need of protection from foreign competition by manufacturers who can afford to place their goods at a cheaper rate on our markets than they can be produced in this country. *A. D. Webster.*

TREES AND SHRUBS.

ABELIA GRANDIFLORA.

Flowering freely from July until frosts in late autumn mar further development, this hybrid Abelia is at present the most useful of the genus among hardy shrubs, though there are one or two promising species among the newer introductions from China.

Abelia grandiflora is an attractive evergreen bush, five feet to six feet or more in height, with rich, shining green foliage and rosy-pink tinted, funnel-shaped blossoms.

It is a hybrid between Abelia chinensis and A. uniflora and, like quite a number of well-known hybrid trees and shrubs, more robust and free in growth than either parent. The plant cultivated in gardens as A. chinensis is almost invariably the subject of this note, the true species being rare in cultivation.

As a subject for hedges, Abelia grandiflora is worthy of consideration in the warmer parts of the kingdom, while in cold or wind-swept districts it may worthily find a place on a sheltered wall or fence.

Cuttings inserted during July or August in a close propagating frame root readily. If the ordinary garden ground is close and heavy in texture, prepare a station of well-drained soil in which to plant.

HIBISCUS SYRIACUS.

Coming from India and China, a warmer and sunnier clime than the British Isles in general, it is only in the milder parts of this country, or in seasons when there is plenty of sunshine during August and September, that we see the varieties of this shrubby Mallow at their best. Failing success in the shrubbery borders the varieties of this Hibiscus, which is known sometimes as Althaea frutex, are worthy of a place on a sheltered wall. Both single and double-flowered varieties are valuable autumn-flowering shrubs.

Grown as bushes, they are of upright habit, deciduous and very free flowering.

Seeds provide a useful means of increase, but the named varieties must obviously be propagated by cuttings or layering, though plants from the Continent are usually grafted. Plant at the end of February or early in March in well-drained, light, loamy soil, adding plenty of leaf-mould to the rooting medium.

A selection of named varieties includes Coeleste, sky blue; Hamabo, white with crimson blotch; Rubis, red; Snowdrift, white—all with single flowers, and the double sorts puniceus, red; and Admiral Dewey, white. *A. O.*

LATE-FLOWERING HEATHS.

Amongst autumn-flowering Heaths, the Cornish Heath, Erica vagans and its varieties, make an important group, and from the later days of summer until the short days of autumn they give an attractive display of colour. The type is a sturdy grower, bearing long spikes of pale pink flowers and is one of the best. E. v. rubra is of a deep red shade, while E. v. alba is pure white.

Calluna vulgaris and its varieties are also extremely useful for autumn effect. C. v. Serlei is a beautiful form with free, branching habit and fine spikes of pure white flowers, while E. v. Hammondii is another strong-growing white variety of great merit. C. v. Alportii is a crimson variety of remarkable vigour which sometimes does not flower until September, while mention may be made of the varieties cuprea and aurea, which are very effective because of their bronze and golden foliage at all seasons of the year, but particularly in the autumn when the new growth is completed.

The Dorset Heath, E. ciliaris, should be given a prominent place, for its long spikes of rosy lilac flowers surmounting its elegant, emerald-green foliage make a picture of loveliness. The rich reddish-purple of E. cinerea, the Scotch Heath, makes this species also a highly desirable plant where masses of colour are wanted in the autumn.

The Corsican Heath, E. stricta, is usually the last to flower and often bridges the gap between the autumn-flowering varieties and the carnea group. It is a tall-growing species with somewhat stiff, upright branches which give the plant a distinctive appearance; the flowers, borne in terminal umbels, are a vivid pink. *A. P. C.*

RHODODENDRON ARBOREUM IN CEYLON.

To meet with one's horticultural treasures in their native habitat is often a disheartening experience. Possibly this is why I have never had the courage to start an alpine garden—that entertaining parody of Nature that is so very popular to-day. But even with trees and shrubs, pride of possession is sorely shaken if one travels far afield. What use is it to plant Azaleas after one has seen the hillsides of Kyushu coloured with them? Until I saw the Stuartias near Chuzenji growing as trees, I fondly imagined my own bush was a fine specimen. And so it is wherever one goes: in Spain, in Portugal, in British Columbia, indeed, wheresoever one has drawn one's store from, Nature can always put our best efforts to shame.

I do not attempt to grow Rhododendron arboreum in my Kentish garden, so I could look with equanimity upon the magnificent specimens that may be seen in and around Nuwara Eliya, that well-known hill-station of Ceylon. Here, at over six thousand feet above sea-level, this Rhododendron seems to prefer full sunshine rather than the shady depths of the forest, although I encountered a few struggling for existence in the dense, Lichen-covered jungle that clothes the slopes of Piduratalagala. It likes best the open grassy *patnas*, where isolated specimens form rugged old trees with remarkably stout stems and branches. The largest of these was one growing on the golf course (Fig. 134). This was approximately thirty-five feet high with a well-shaped, rounded crown of about the same diameter. The circumference of the trunk, just below the junction of the lowermost branch, was nine feet nine inches—surely a surprising measurement for a Rhododendron!

At Nuwara Eliya their scarlet flowers may be seen at almost any time of the year; during my visit in February only a few specimens were in bloom. This perennial flowering appears to be common to many species in the more elevated equatorial districts. Prunus Puddum, which is also found at Nuwara Eliya, behaves in the same way and apparently never has a definite flowering season. The tree shown in the photograph immediately to the left of the Rhododendron is a specimen of this Cherry. *Collingwood Ingram, The Grange, Benenden.*

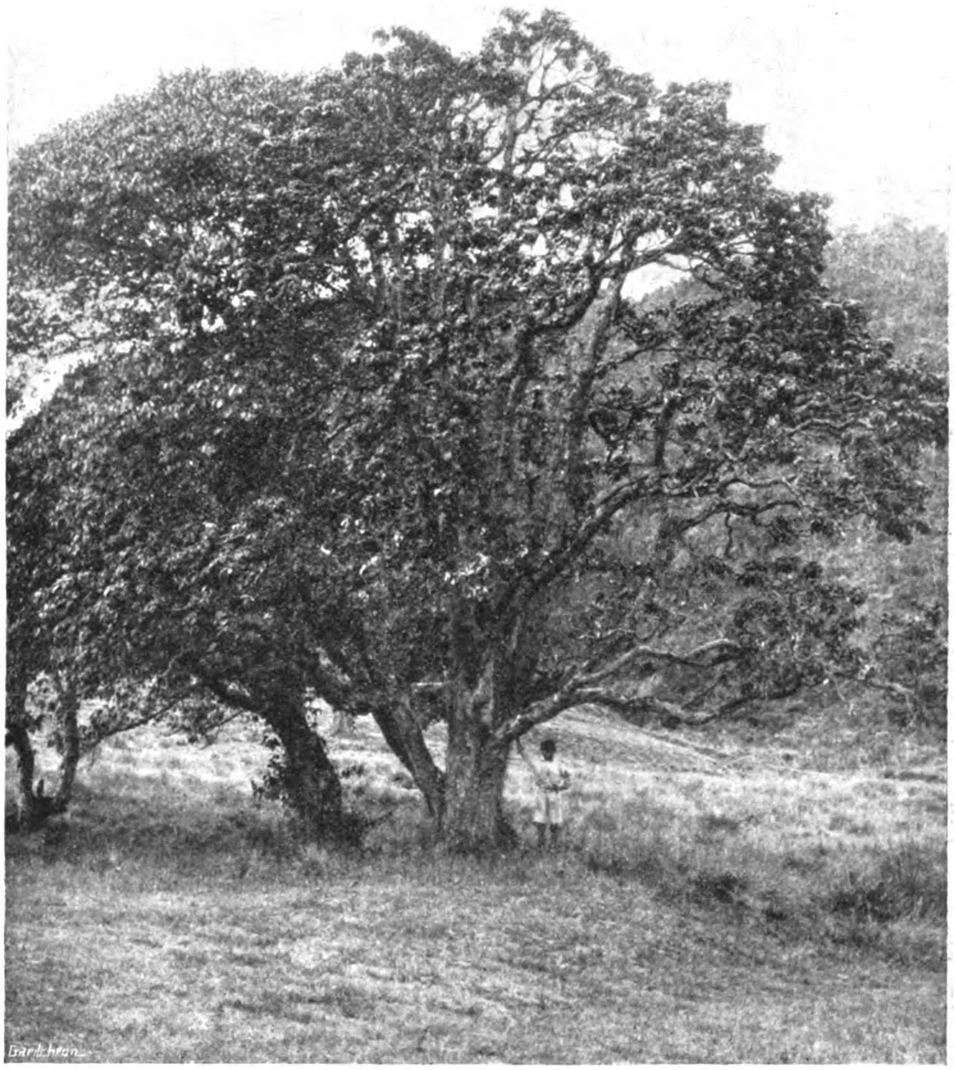


FIG. 134.—A FINE SPECIMEN OF RHODODENDRON ARBOREUM IN CEYLON.

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MR. F. KINGDON WARD'S NINTH EXPEDITION IN ASIA.[*]

III.—Hkampti Long.

On my arrival at Fort Hertz, I found fifty coolies waiting for me, and during the next two days I sent them on ahead to the Nam Tisang. I myself had to wait two days in order to buy rations, as one could get nothing in the country we were about to explore; indeed, north of Myitkyina, the Shan plain is the only place this side of Tibet where a surplus of food is available.

The weather was showery, with gloomy skies and only an occasional glimpse of the snow to the north, which, except on the highest peaks, was now fast melting. The maximum day temperature, however, touched 74°, but the nights were always cool, the temperature dropping to 61° on the 16th, and to 59° on the 17th, with early morning mist and heavy dew. On April 17th we started again with the last lot of coolies, and travelling eastwards, presently reached and crossed the Mali Kha (Fig. 135). The water was clear and very warm (65°), though much of it must have been derived from melting snow not very far away; but the Mali lazes along in a wide, shallow bed on the plain, and soon gets heated by the sun.

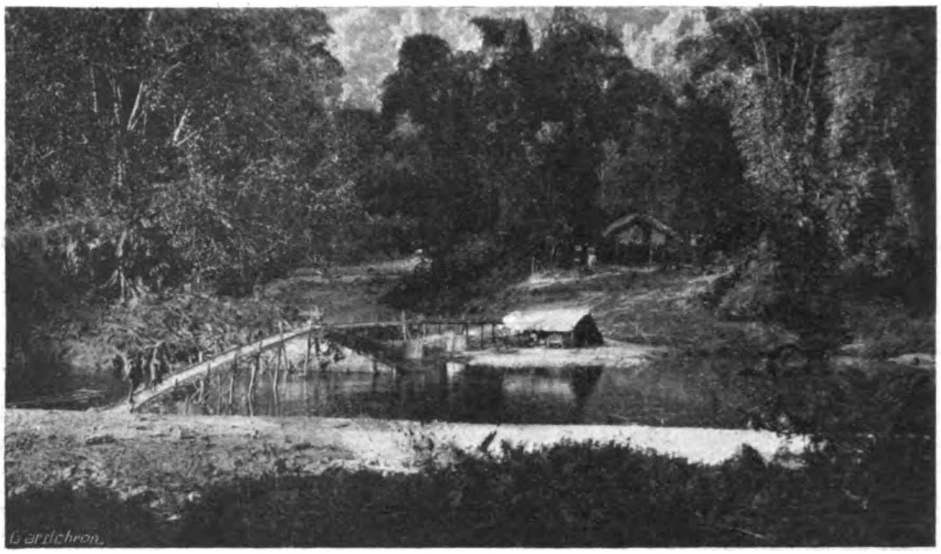

FIG. 136.—BAMBOO BRIDGE IN THE JUNGLE.

Photo by T. Hare.

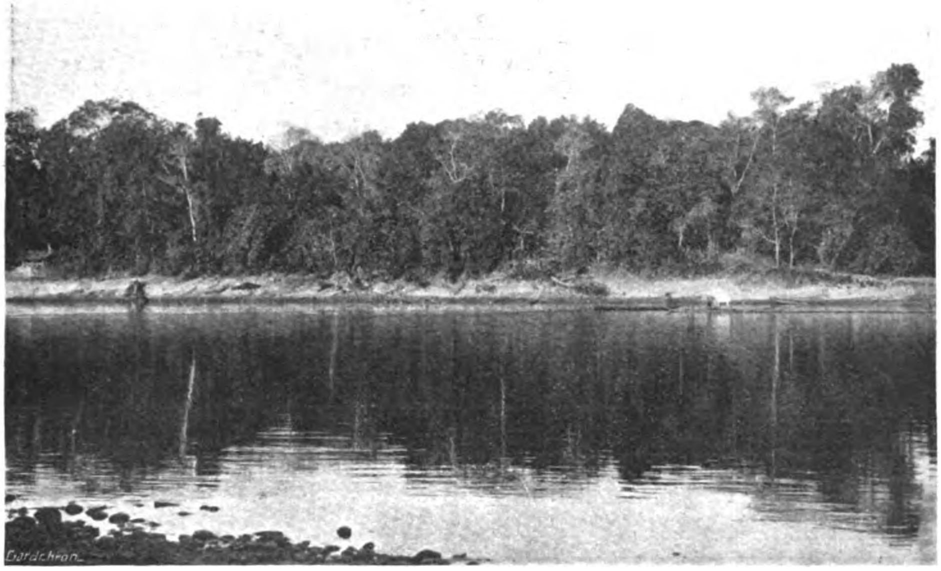

Photo by T. Hare.

FIG. 135.—THE MALI KHA FERRY.

It was a bright day, and the assorted tints of the trees contrasted vividly with the cloud-flecked, azure sky. Little was in flower, and the forest at close quarters presented a massive impenetrable front of hostile green. I found a Mulberry bush in fruit, the small berries, though hardly ripe and somewhat tart, quite edible. That night we slept at the foot of the hills.

Next day we left the cultivated plain behind, and ascending the first ridge, entered the jungle. Between the Mali Kha and the Nam Tamai are two hill ranges, with the Nam Tisang—a tributary of the former river—flowing between them. It is four marches from the Mali to the Tisang (five from Fort Hertz), and four from the Tisang to the Tamai. Thus the journey is a constant succession of ups and downs, with rarely a glimpse through some chance rent in the dense canopy of foliage overhead, of the country; even then one seldom sees anything as the mountains are always muffled in cloud.

Flowers at this season are few, particularly in the jungle. Orchids there are, in some variety, but mostly terrestrial; many of the epiphytic species store up water during the prolonged rainy season, or hot weather, in order to flower in the cold weather, when it is sometimes, not often, fine; most of them were therefore just over. A Dendrobium, with very fragrant, cream-coloured flowers, was fairly abundant in the valleys. Ground Orchids grew by the path, and on the rocks were masses of a dainty, mauve Gesnerad, and a creeping Chirita, all these being shade-lovers. There was also an Arisaema with yellow, cowl-like spathe and a regular cart-wheel of a leaf. Queerer still, was a large Aroid, not quite in bloom, whose arrow-shaped leaves, borne on limp cloth-yard shafts too weak to support them, would have lain prostrate on the ground, or hung down uselessly, but for a device of the petiole which, just below its insertion, was capable of bending and stiffening to whatever angle might be necessary in order to bring the huge arrow-head blade (sometimes three feet long and a foot wide) into a horizontal position. The entire plant was beset with prickles, which turned upwards, so that as the leaf-stalks drooped under the weight of the blade the now downward projecting prickles could claw at the surrounding vegetation and prevent a further collapse. This Aroid grew by streams in the darkest depths of the jungle.

Several species of Begonia grew on the undersides of the rocks and on shaded banks, at all altitudes. The commonest, found in every thicket, attained a height of four feet, but was of little account, the white flowers, though springing from the stem in ample clusters, being small. More notable was a species found at higher levels, 5,000 feet to 6,000 feet; its stems covered with a crimson pile, its white flowers an inch or more across, the plant attracted immediate attention on banks where nothing else was in flower. Two other species, neither of them in flower yet, were remarkable for their foliage, the one for its size, the other for the fine fretting and delicate bronze colouring of the leaves. A fifth species, also not in flower, departed widely from the ordinary elephant's-ear type of leaf, for its leaves were quite regular and strap-shaped; this last grew on rocks in the stream, and was quite rare. Nothing has been done in horticulture with the Eastern

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[*] The previous articles of Mr. Kingdon Ward's Ninth Expedition in Asia were published in our issues of August 14 and 28, 1926.

Begonias, all our conservatory plants having originated from a few South American species. A really fine hardy Begonia would be a distinct acquisition, but though one may find them here growing at 7,000 feet, I fear they have no constitution.

On the higher ranges were a few Rhododendrons, all of them soft, and only two species—R. dendricola and R. Mackenzianum—in flower. Three ranges are crossed at over 6,000 feet, but only the third, the real divide between the eastern and western river systems, whence you descend abruptly to the Nam Tamai, is of any importance; and then there is nothing to show it.

Above 4,000 feet the ranges are covered with Oak and Birch, Magnolia, Rhododendron and Screw Pine, Bucklandia, Schima, Illicium and many other trees. Below this the forest is practically evergreen. Rain falls at all seasons, and when there is no rain there is heavy dew. The winter is mild, and moderately fine; at most there is a slight check to vegetative activity. The critical climatic factor is the ever saturated atmosphere which keeps the vegetation constantly moist and is always ready to supply water, in the form of rain, mist or dew.

At higher levels at least half the forest trees are deciduous, and there is a well-marked winter period of rest.

We had to spend four days in the hot, moist valley of the Nam Tisang, while we collected a fresh relay of Nung coolies. Villages here are few and far between, and then they usually consist of only two or three huts barely within shouting distance. Consequently my *piada* had to go far afield, up the valley and down the valley, visiting scattered villages and flushing a few coolies at a time. As they came in to my camp, they were sent off with boxes or bags of Rice, to the Nam Tamai.

We experienced a whole week of fine weather now, and the heat in the middle of the day was most exhausting, though the thermometer only showed 90° between noon and three; and always there was the early morning mist and heavy dew, which kept the forest fresh and green, while the nights were deliciously cool, the minimum temperature varying between 59° and 61°. It was really only uncomfortably hot for about three hours. Far more unpleasant than the heat were the insects—sand flies, horse flies, blister flies and other bloodthirsty creatures.

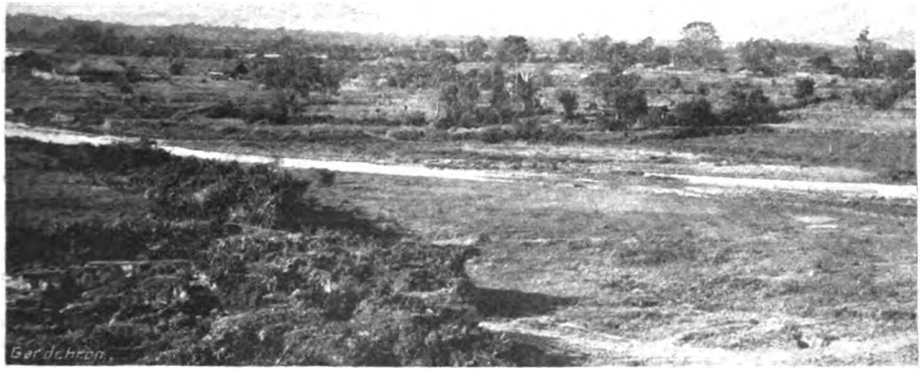
Photo by T. Hare.

FIG. 137.—THE PLAIN OF HKAMPTI.

Amongst several interesting shrubs in bloom were, a Capparis with closely crowded fragrant white flowers, bristling with stamens like antennae, giving them an odd, insect-like appearance; a Clerodendron; a Viburnum; a large, bushy Strobilanthes, growing in colonies; a scrambling Aralia; and the magnificent Lonicera Hildebrandiana, climbing nimbly up a forty-foot tree and wreathing its summit with festoons or orange flowers, six inches long.

After crossing the Nam Tisang, the fine weather soon broke up again, though it remained sufficiently clear to permit a brief and hazy view from the next ridge, of a snow-clad range away to the east. Then came the rain, which was ushered in by a breezy thunderstorm on the main divide. Crossing the pass at 6,700 feet, we saw nothing at all, being smothered in the clouds; the trees, clogged with a flowing drapery of epiphytes till they lost all shape, dripped dismally, and the whole jungle reeked.

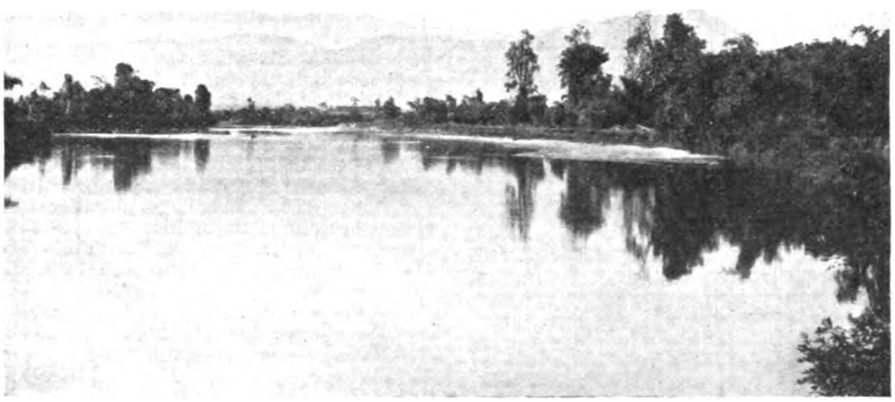
Photo by T. Hare.

FIG. 138.—THE NAM PALAK; PLAIN OF HKAMPTI.

Yet in spite of all the rain, there is no water available at these steep, razor-backed ridges, and one may march for hours up one side of the range and down the other, without coming to a pool or a trickle of water; on a hot day this is very exhausting. Worse still, there is no place where one can pitch a camp, for the streams cut deep and fast, the flanks of the ridges are precipitous and covered with dense forest, and it is almost impossible to reach the water far below; nor is there any level ground where one can pitch a tent.

On the other hand, one must stick to the ridges, as no progress can be made up the deep, slit-like glens, choked with the impenetrable jungle. Thus there is some difference between the composition of the flora in the glens and on the ridges, and even between the two flanks of a ridge on the exposed side of which, in fine weather, the dew is quickly dispersed by the sun, while the other side is constantly moist.

Above the Nam Tamai, Rhododendron dendricola and R. Mackenzianum were in fine feather. The first-named is an epiphyte, growing high up on big trees (or occasionally you see it established on a big boulder in the stream bed) where it forms a small bush, often hanging downwards. But the white flowers are difficult to see against the light, and in the smother of alien vegetation which crowds every limb overhead. Sometimes its presence is betrayed by a sweet fragrance stealing through the jungle, or by a milk-white pool beneath some giant Oak, or by a filmy cloud aloft amongst the dark verdure. The corolla is large, pure white with a golden aureole at the base, and distinctly fluted, there being a special device to ensure cross-pollenation. The capsule is short and altogether small, and the scales on the under leaf-surface are set rather far apart. The species is found from as low down as 3,500 feet to as high up as 6,500 feet, perhaps higher; it was now passing over, but as I saw it in flower here in November, during my journey from China in 1922, it has a good innings during the cold weather. Subsequently I found it very common on the upper waters of the Nam Tamai, and this region, rather than Hpimaw, where I first discovered it, seems to be its real home. It is by no means certain that seeds of R. dendricola have ever been sent to England; but, of course, it would not be hardy with us. R. Mackenzianum is very different. It is a forest tree, and though of slender girth, it grows fifty feet high here, holding its own with many a lesser forest tree. The flowers, which are produced in vast quantities, are small, flushed pinkish purple and fragrant, so that one may detect a tree in bloom far overhead though no flowers be visible. Sometimes one caught a glimpse of surging blossom, like a sunset cloud, and after a storm the path was strewn with its flowers.

In fruit, I noticed R. vaccinioides, another epiphytic species, and there were seedlings and saplings of two or three more species. And then, of course, lowest of all there were the carmine flames of R. indicum, still scorching the rocks in the bed of the Nam Tamai where we arrived on April 29. *F. Kingdon Ward.*

DEVELOPMENTS AT WISLEY.

THE attractions of Wisley are many and varied, and the results of the trials carried out, and the research work pursued there, render great service to the progress of horticulture, but from observations made during periodical visits to the gardens there is abundant evidence to show that a large number of the Fellows go there regularly to study the practical side of gardening and to gather information which may help them in their own gardens.

These visitors will have watched with considerable interest the gardening developments during the past year, and a few notes on the practical work carried out there during this period may be of interest to the many readers of *The Gardeners' Chronicle* who are unable to make more than an annual visit or perhaps not even that. The building and planting of the dry walls at the main entrance have been completed, and the plants used are already clothing the walls in a highly satisfactory manner. The gravel paths from the entrance to the laboratory front and to the flight of steps leading to the higher level have also been stone-paved, thus including this end of the garden in the scheme of wall- and stone-path gardening which extends along the whole of the front of the laboratory.

The Rose garden, which is situated immediately at the top of the flight of steps, has been entirely remodelled and replanted and is a very attractive feature of the garden. By reducing the width of the broad roadway which previously existed, to a six-foot gravel path, and removing the row of climbers at the back, sufficient space has been obtained to lay out beds in grass on each side of the path. These beds vary in size, the small ones being planted with one sort only while the larger ones contain several varieties in well-arranged groups. In all, some forty varieties are represented, including most of the more popular decorative Roses which had already been grown in the trial grounds. Many practical growers in the mid-Surrey area have paid periodical visits to the trial grounds during the past two or three years to make notes of the vigour of the varieties under trial with the idea of gaining knowledge to help them in the selection of suitable varieties for planting in their area. Assuming that these trials are carried out with cultural skill and under recognised garden practice the value of such knowledge must be of great assistance to planters, but the extraordinary vigour of the plants in the Rose garden makes one wonder if the cultural details usually carried out by successful Rose-growers are followed in the trial grounds. Although only planted during the last planting season, the plants in the Rose garden are much more vigorous than those in the trial grounds, and their strength and cleanliness, together with the remarkable second season floral display, in a large number of varieties, bear ample testimony to high cultural skill. Certainly the practical grower who wishes to study the vigour and usefulness of varieties, would be advised in future to go to the Wisley Rose garden, where good cultural practice is so well exemplified.

Amongst varieties which are flowering freely at the present time are Ariel, Betty Uprichard, Etoile de Hollande, Francis Gaunt, Independence Day, Johanna Bridge, K. of K., La Tosca, Madame Butterfly, Mrs. C. V. Haworth, Mrs. Wemyss Quinn, Mrs. H. Bowles, Salmon Spray and Shot Silk.

Considerable renovations and replantings have taken place in the rock garden, with some minor alterations in construction on the top and drier parts with the object of improving the approaches from the main entrance and giving subjects in this area more soil in which to grow. Many of the newly-planted colonies have made remarkably good growth during the present season, and particularly noticeable were Achillea tomentosa King Edward, Artemisia pedemontana, Asperula suberosa, A. Gussonii, Androsace Chumbyi Brilliant, A. lanuginosa, Antirrhinum glutinosum, Aethionema Warley Rose, Aubrietia Magician, Campanula carpatica pallida, C. garganica hirsuta, C. g. W. H. Paine, C. caespitosa Miranda, C. pulla, Dianthus viscidus, Dryas octopetala, Erodium Sibthorpianum, Helianthemums in great variety, Euphorbia capitata, Geranium Wallichianum Buxton's var., Gentiana sino-ornata, Hypericum polyphyllum, Lithospermum prostratum Heavenly Blue, Mazus rugosus, Onosma taurica, Trifolium uniflorum, Saxifraga Aizoon lutea, S. A. pectinata, S. A. notata, S. crustata, S. Burmattii, S. paradoxa, S. Snowflake, S. Watermanii, Scutellaria baicalensis, Veronica Haastii and Zauschneria californica. This department becomes more interesting and comprehensive every year, and the addition of a new alpine house now in course of construction will greatly add to its importance and attractiveness during the winter and early spring.

In the woodland garden and the field adjoining it known as "Seven Acres," much work was done during the last planting season to develop that part of the field adjoining the woodland garden, more than an acre being trenched and planted with new shrubs, using the existing woodland garden as a background. The iron fence and bank of Rhododendron ponticum which made a distinct dividing line between the gardens have been removed, and the banks on either side of the ditch make ideal homes for some of the newer Chinese Primulas. Amongst these is a fine group of P. Florindae, a new giant yellow-flowered species of the sikkimensis type recently introduced by Mr. Kingdon Ward; also groups of P. Waltonii and P. microdanta by the same collector. P. helodoxa, P. japonica, P. pulverulenta Bartley strain and Bullenyana hybrids are also planted largely. The partial clearing of overhead growth along this line has permitted the planting of many of the newer Chinese Rhododendrons in well-sheltered positions amongst the Oaks. This clearance also opens up the view into the woodland garden from the field side, entirely destroys the old line of demarcation and effectively combines the features of the new garden with those of the old. The grass in the field has been kept mown during the present season, giving visitors comfortable access to the whole of the shrubberies in this area, which has become much more attractive from recent developments. *Onlooker.*

NOTICES OF BOOKS.

A Garden of Herbs.

THE object of this very pleasant book*, now in its third edition, is to encourage a revival of old-fashioned herb gardens in England. The bulk of the text consists of a long chapter, "Of Sundry Herbs" (eighty in number); the herbs being in alphabetical order, each with its appropriate receipts. Shorter chapters are included, on Herb gardens, Sallets, Herb Pottages, Herb Drinks and Home-made Wines, the Picking and Drying of Herbs, and, lastly, on Sweet Scents. The book ends with a long list of authorities, but lacks an index.

In reading over these receipts, collected from printed and MS. sources from the sixteenth century to the present day, one is impressed both by their great variety and the evidence they afford of those simpler days before the era of food adulteration and patent medicines. Nevertheless, many of these receipts would seem to be of somewhat doubtful value in these days; and in some cases the directions given are rather vague. The old receipt books are usually very charming compilations; and happy is the possessor of a really old one in MS.! Across the centuries, in the written words of some long-forgotten person, we may call to life the fragrance of quiet, leisurely days spent in the herb garden, the still-room, and the library. Of those who now make literary use of these records of the past, one important thing is to be asked—that the exact spelling and punctuation should be strictly followed; for without these, half the charm and value of such quotations is lost.

In a book like the present one, a somewhat curious blending of practical knowledge, superstition, and mistaken horticultural ideas, is inevitable. It seems, however, rather a mistake to give too much prominence to the wrong opinions of older authors. Often valuable as folklore, or in the historical aspect, such wrong ideas are apt to be misleading, especially if quotation marks are omitted, as in several places in the present work.

The chapter of Herb Gardens is an historical sketch. The author seems to imply that the Druids had written books on herbs. This seems scarcely likely, as only the very smallest traces of their herb-lore exist in literature. Had there been a written record, we should expect to find some survival of it in later MSS., but there the authorities are never druidical. The massacre of the Druids at their headquarters in Anglesey during the Roman occupation perhaps dealt the death blow to their oral teachings on herbs.

In reference to these older MS. herbals, a curious mistake has been made in the present book. The old common name of the Lesser Periwinkle is given as "Joy of the Ground." Although this is a very charming phrase, the author's reading of the old MS. is incorrect. "Juy of Grownde" was the old scribe's way of writing "Ivy of Ground," or Ground Ivy, a name applied in early times to the Lesser Periwinkle.

As to the illustrations, the frontispiece is taken from a fifteenth century illuminated MS., and shows a characteristic garden of that period; and the other eight illustrations are interesting pictures from sixteenth century herbals, giving scenes connected with the growing and distilling of herbs. It is to be regretted that the latter illustrations have been reproduced by the half-tone process. Old wood-cuts reproduce much better as line-zincos.

If one might venture a suggestion, it would be that the author should produce a Receipt Book of her own; dispensing with quotation, and relating with exactness the receipts still found to be of use at the present time. A small book of that kind, perhaps illustrated by well-chosen wood-cuts of plants from the old herbals, might be of considerable interest. *S. Savage.*

NEW DAHLIAS.

DAHLIAS FOR TRIAL AT WISLEY.

THE Joint Committee appointed by the Royal Horticultural Society and the National Dahlia Society considered the merits of a large number of novelties on the 7th and 21st ult. and selected the following for Trial at Wisley next year.

Alan Cobham.—A large Decorative of creamy-yellow colour flushed with pale rose-pink on the outer portion of the florets. This and the two following were shown by Messrs. JAMES STREDWICK AND SON.

Goldmine.—A large Decorative of golden amber colouring.

J. L. Crowther.—A pale pink Decorative variety.

Royal Purple.—An excellent Cactus variety of good exhibition form. This, and the following variety were shown by Mr. H. SHOESMITH.

Peach Blossom.—A long-stemmed Cactus variety of pale pink shades which should be of distinct garden value.

Falcon.—A deep scarlet Charm Dahlia of considerable beauty. This and the following were shown by Messrs. BURRELL AND CO.

Citron.—A good citron-yellow Charm variety.

Zittah.—A brilliant scarlet-crimson Charm variety.

Ruth.—A pink Charm Dahlia with rosy carmine blotch at the base of the florets.

Uedas.—A yellow miniature Paeony variety.

Locasno.—A shapely medium-sized Decorative variety of pale orange-yellow colour. Shown by Mr. H. CARLEE.

Negro.—A large Decorative of velvety-maroon colour. This and the following were shown by Mr. H. BALLEGO.

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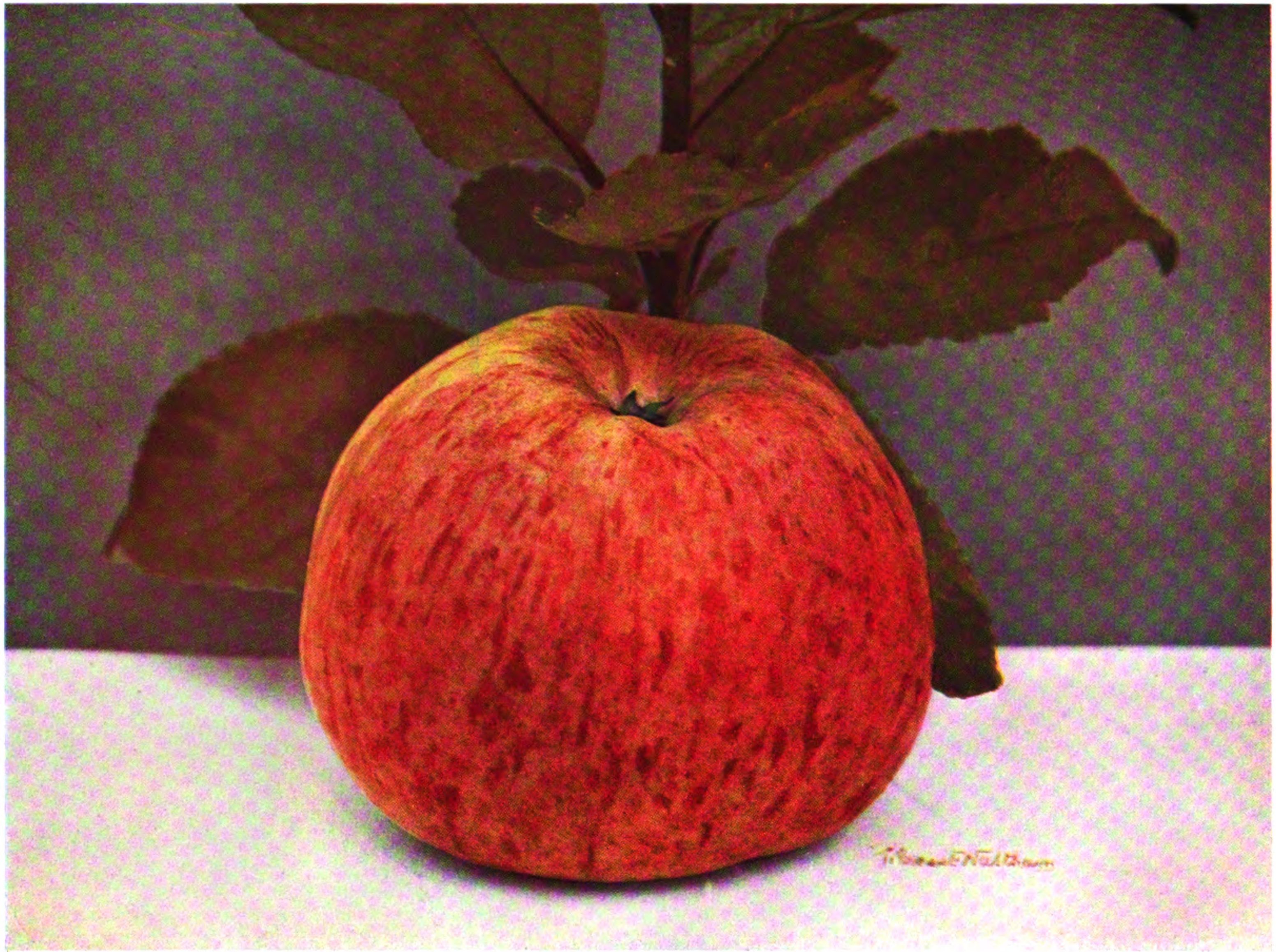
* *A Garden of Herbs.* By Eleanour Sinclair Rohde. Revised and enlarged edition. London: Herbert Jenkins. 1926. Demy-octavo, pp. xvi + 300; price 10s. 6d. net.

Supplement to The GARDENERS' CHRONICLE



APPLE S. T. WRIGHT

Giant Kremhilde.—A large Cactus variety of pink colour with a pale primrose centre.

Betsy Major.—A good purple Decorative variety of medium size. Shown by Mr. P. MAJOR.

Lady Madden.—A pale primrose variety. This and the following were shown by Messrs. J. CHEAL AND SONS.

Epsom Star.—A useful scarlet variety.

Lustre.—A crimson Star variety.

Mrs. Goodard.—A crimson miniature Paeony variety.

Mrs. D. Hepburn.—A red Decorative of medium size.

Mrs. Crowley.—A Decorative variety of vivid rose-pink colour with a yellow centre. This and the two following were shown by Mr. K. VAN BOURGONDIER.

Erle Williams.—A medium-sized flower of crimson and milk-white colouring,

Purper koning.—A large Decorative of bright purple colour.

Nigger.—A pretty crimson Pompon Dahlia. This and the following were shown by Messrs. JARMAN AND CO.

Falstaff.—A scarlet and yellow Paeony-flowered variety.

Coronach.—A buff-orange Paeony-flowered variety.

Rapallo.—A medium sized Decorative variety of uncommon dull velvety crimson colour edged with gold. The names of the exhibitor of this and the following fine varieties were not stated.

Rose Tendre.—A medium sized Decorative of soft rose-pink colour.

Clown.—A scarlet and white Decorative of medium size.

Wealthy.—A medium-sized Decorative of rosy carmine colour.

Aida.—A miniature Paeony of deep rose dolour with a crimson centre.

Mrs. D. Luscombe.—A vivid crimson Decorative of medium size.

Charm.—A well-formed Cactus variety with rolled, incurving florets of pink colour on the outer ones and white in the centre. Shown by Mr. H. SHOESMITH.

Irma.—A pretty miniature Paeony variety of vivid rose-pink colour with a small crimson zone. This and the two following were shown by Messrs. BURRELL AND CO.

Maggie.—A miniature Paeony variety of orange-buff colour edged with rose-pink.

Tibothe.—Another orange-buff-coloured miniature Paeony-flowered variety, but flushed with light carmine.

FRUIT REGISTER.

APPLE S. T. WRIGHT.

THIS showy culinary Apple, which forms the subject of the coloured Supplementary Illustration presented with this issue, was raised by Messrs. James Veitch and Sons, who received the R.H.S. Award of Merit for it on October 7, 1913, but it was only in 1924 that it was distributed by Mr. Allgrove, of Middle Green Nursery, Langley, Slough, who raised the variety when in the employ of Messrs. James Veitch and Sons from Peasgood's Nonesuch crossed with Bismarck.

The variety is very conspicuous in a collection of Apples on account of its handsome appearance, for the skin is a most glowing rose colour, the ground being suffused and lined with crimson. Mr. Allgrove informs us that the tree is a strong cropper and crops freely, also that trees in his nursery this year are bearing excellent crops of highly-coloured fruits. The tree is a somewhat close grower and succeeds in cordon, pyramid or bush form. The flesh is white, very juicy and of rich flavour when cooked; it may be described as a dual-purpose Apple, for although it is large for a dessert variety it is very nice eaten raw. The late Mr. S. T. Wright, after whom the variety was named, sent the following appreciation of it to Mr. Allgrove :—" I greatly appreciate the compliment you have paid me by giving my name to such a grand Apple. I have tested the cooking quality of those you sent me and found it excellent; the flesh is white, smooth and of delicious flavour, leaving nothing to be desired; it will undoubtedly become a great favourite when put in commerce."

PLUM JEFFERSON.

PLUM Jefferson (Fig. 139), is one of the finest of dessert varieties, and a favourite sort with private growers. The tree is a good cropper, while the fruit has a luscious appearance and is of splendid flavour.

This choice Plum is of American origin; it was raised by Judge Buel, of Albany, New York, about the year 1825, and named after President Jefferson. The raiser presented a tree to the Massachusetts Horticultural Society in 1829, and in 1841 trees were given to the Horticultural Society, in whose gardens at Chiswick it fruited in 1845.

Nothing is known as to the parentage, but its growth and wood most closely resembles Coe's Golden Drop, and some authorities suggest that it was a seedling of that variety. It is not a variety suitable for market purposes, but there is no better Plum for the private grower. It is a self-sterile variety, and should be planted in association with other free pollen bearing sorts, for preference, early-flowering varieties, as Jefferson is an early bloomer. The habit is somewhat upright; the tree is an excellent grower and does well as a standard. The fruits are greenish-yellow, turning when ripe to a rich golden-yellow flushed with red on the sunny side and marked with a few red dots. The flesh is juicy, rich and of delicious flavour and separates from the stone. The specimens illustrated in Fig. 138 were shown by Mr. J. C. Allgrove at the meeting of the Royal Horticultural Society on September 7, Jefferson representing one of many fine dessert Plums exhibited by him on that occasion.

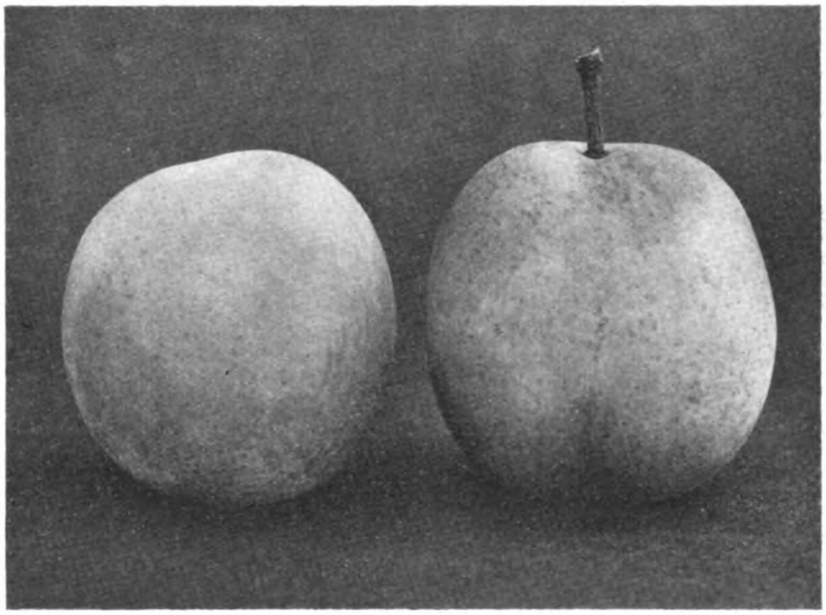


FIG. 139.—PLUM JEFFERSON.

APPLES OF HIGH COLOUR.

WHERE space is ample, brilliantly-coloured Apples are well worth planting as objects of beauty and garden adornment. Some varieties combine beauty with usefulness, and these will be found in all representative fruit collections.

Gascoyne's Scarlet is variable in appearance; orchard-grown standards will bear fruits of an almost uniform red or scarlet colour, but I have gathered fruits from espalier trees of an almost white colour overlaid with a delightful pink flushing, the whole covered with a delicate bloom. This variety is self-sterile; it was raised at Sittingbourne, and the name commemorates its raiser. It was introduced by Messrs. G. Bunyard and Co. in 1891.

A well-fruited tree of Scarlet or Red Victoria is indeed a gorgeous sight; the fruits are wholly coloured a brilliant crimson and are most effective in bright sunshine. A most prolific variety, this Apple is of considerable culinary value and is of some commercial importance.

Emperor Alexander is a very large Apple, coloured pale yellow striped bright red and of regular outline, the fruit having a most finished appearance. The tree grows well on the Paradise stock, and makes a particularly fine bush or pyramid. Of Russian origin, the variety was first known in England during the early years of the nineteenth century.

Peasgood's Nonesuch will attain to enormous size and exhibit very beautiful colouring; the fruit is round and of very fine finish. The colour is yellow, beautifully and evenly striped with red. The tree is fertile, and is said to be a seedling from Catshead.

Rival is a good Apple and a very pretty one; the fruit is of medium size, round and even, the colour a uniform bright carmine. The tree is fertile and a good grower. This variety was raised by Mr. Charles Ross and is worthy of general cultivation. Mère de Ménage is of distinct appearance; it is a very large fruit, brown in colour, with a brighter flush on the sunny side. It lends distinctive appearance to a collection. The tree is of vigorous growth. This Apple was introduced from the continent in 1800. Cox's Pomona is of medium size, yellow, with brilliant red or scarlet stripes; it is quite good for baking.

John Standish is a new Apple of vivid colouring and one of good quality. It is in season until March. The fruit somewhat resembles Worcester Pearmain but is even more brilliant It was introduced by Mr. House, of Bristol, so recently as 1921.

Barnack Beauty is a very handsome Apple and an excellent cropper; the fruit is of medium size, coloured yellow, flushed and striped bright red. The tree is very prolific. This variety is of some value as a late dessert or culinary Apple.

Other brilliantly-coloured Apples are Baumann's Red Winter Reinette, Worcester Pearmain, Cutler Grieve, Crawley Beauty, Paroquet, Calville Rouge Précoce, Washington and Duchess's Favourite. *Ralph E. Arnold.*

REMARKS ON THE CONDITION OF THE FRUIT CROPS.

(See **Tables and Summaries, Ante, pp. 111-117**

(*Continued from p.* 276.)

ENGLAND, S.

Surrey.—There was a good show of blossom on all outdoor fruit trees in spring, but owing to frost and cold winds those that did set a crop dropped their fruits early, with the exception of Pears and Plums. Strawberries were a total failure. Quantities of coal ashes have been dumped on the kitchen garden for years and this may account for the poor crop. The soil is a deep, alluvial loam by the side of the river Mole and should grow fruit to perfection, but nothing short of deep trenching will get rid of the coal ashes and clinkers that have been incorporated with it for years. *Grigor Roy, Stoke D'Abernon Manor Gardens, Cobham.*

——Apples, the most important of our fruit crops, are very disappointing in this district. The trees in the spring were well furnished with bloom, but the fruits, in most cases, failed to set. Many of those that did set dropped after they began to swell. Our best-cropped dessert Apple is Worcester Pearmain. There is a light crop of Blenheim Pippin and some trees of Charles Ross have a light crop. Cox's Orange Pippin is almost a failure, also Ribston Pippin. Of the culinary sorts some of the older trees of Bramley's Seedling and Newton Wonder are carrying light crops but most other sorts have failed. Pears bid fair to be plentiful but many fruits dropped after commencing to swell. Plums are an average crop on wall trees. Cherries dropped badly during the process of stoning. Peaches and Nectarines were good, and the trees are very clean and healthy. Apricots dropped at the stoning stage leaving the crop very light. There are very fine trees on a wall here and in favourable seasons they give a good yield of fruit. *J. Collier, Gatton Park Gardens, Reigate.*

——The abundant fruit blossom this spring came as a pleasant surprise to many, and yet we have no Apples, Cherries or Apricots. Peaches, Pears and Plums are our best crops. Many Pears dropped, Strawberries were only half a crop, and small fruits except Loganberries and Raspberries were below the average. We had no frost to account for the failure, and I think imperfect blossoming had a great share in the present shortage. The exceptional heavy crops of last year, the cold, wet spring, except for one short period, and the almost complete absence of summer weather, may also have some connection with the deficiency of hardy fruits. *F. Jordan, Ford Manor Gardens, Lingfield.*

——Apple blossom, generally, was light, but those varieties that did flower well have, on the whole, set fairly good crops. For most of the varieties this is an "off" season. Some Pears are cropping very well indeed, others very poorly, and here again where bloom was good the crops are good. Black Currants flowered extremely well but set a disappointing crop. Frost damage was severe on early-flowering varieties, but later-flowering varieties fruited very well. Gooseberries were very good indeed, also many sorts of Red Currants. Raspberries also were good, and in spite of the cold, bleak spell just after setting, the berries were of good quality. *Alan N. Rawes, R.H.S. Gardens, Wisley, Ripley.*

——Pear trees bloomed freely and the fruits set well but subsequent cold winds injured the crop. Apple trees bloomed at a very cold and wet time and aphis has been very troublesome. Plums set freely but these fruits also were damaged, whilst young, by cold winds. Gooseberries cropped very well and the berries attained a good size for this garden where the soil is so shallow and no trees make much growth. Soft fruits were rather late in ripening. Strawberries were a good crop, but the first large fruits were spoiled by rain. The soil is shallow on chalk. *G. E. Twinn, Polesden Lacey Gardens, Dorking.*

Sussex.—The Apple crop is most disappointing. In several orchards under my charge in this estate trees of King of the Pippins are practically the only ones with fair crops. Scarlet Nonpareil in three orchards is fairly well cropped, and old trees on the lawns in the pleasure grounds are laden with fruits in nearly every case; some of these trees have as many as thirty varieties grafted on the one stem. Pears trained on high walls are cropping excellently and the fruits have been thinned severely, but the foliage on some is not quite to my liking. The stems were buried a little too deeply and several inches of soil have been removed, with marked success. Peaches, Nectarines and Apricots were all satisfactory and the foliage is perfectly free from blister. Plums were very good on some of the wall trees but in the orchards very poor. Damsons are a good crop. Cherries, both dessert and Morello set very heavy crops but the fruits failed to stone. Black fly has been very troublesome despite frequent washings with strong insecticides. Black Currants were a failure. Red Currants, Loganberries and Raspberries gave very good yields. Strawberries were very poor, small fruits with no flavour. Nuts are very promising. The soil is light and very deficient in lime and potash; it overlies green sandstone. *Frederick Streeter, Petworth Park Gardens, Petworth.*

——I attribute the poor condition of the Apple crop to the very cold winds experienced all the time the trees were in bloom. The soil in this district is a fairly stiff loam with a subsoil of chalk and gets very hot during the summer. Apple trees especially are very liable to canker on our soil. *John W. Dickinson, Castle Gardens, Arundel.*

——Plums, which bloomed in favourable weather, are the crop of the season. Apple trees experienced cold, wet weather at blooming time and the fruit did not set at all well. This, combined with the fact that there was a heavy crop last year, has resulted in a very light yield for the present season. Pears set abundantly but have since dropped freely, reducing the crop to average proportions. Gooseberries and Red Currants were both heavy crops, and Raspberries a fair average yield. Black Currants, where the bushes were protected from severe aphis attack, were satisfactory. *E. M. Bear, Magham Down, Hailsham.*

——Early Pears were plentiful on standard and pyramid trees, and such varieties as Madame Treyve, Madame du Pius, Besi de St. Agil, Figue d'Alencon, and the pink-fleshed Pear Madame Hutin are carrying good crops on walls, but many of our choicest kinds have failed. Apples, which gave such promise when in bloom, dropped their fruits freely following cold windy days and frosty nights, especially those growing in low land. Lane's Prince Albert, Bramley's Seedling, Radford Beauty, and most of the early Codlin Apples, however, were very promising. Peaches have set a good crop, and Figs about our usual average. Plums, if disappointing after their great display of bloom, are a good average crop. Bush and small fruits were abundant and the quality very good. The soil is sandy clay overlying sandstone rock. *E. Markham, Gravetye Manor Gardens, East Grinstead.*

Wiltshire.—The fruit crops in this district are very light. Apples bloomed well but the crop was spoilt by hailstorms and frost. Pears on walls are good, where the fruits were not spoilt by hail stones. Bush fruits suffered by the cold winds of early summer. *H. H. Mills, Fonthill House Gardens, Tisbury.*

——Apples are a poor crop; the trees flowered profusely and apparently the fruits set freely, but quite two-thirds dropped off when of the size of Walnuts. The only sorts that are satisfactory are the early varieties Beauty of Bath, Emneth Early, Worcester Pearmain and Golden Spire. Pears are an average crop and are clean and free from scab. Plums were a good average crop, and varieties like Early Prolific and Czar cropped splendidly. Cherries were a light crop but of good quality. Peaches and Nectarines were good average yields; the soil and conditions in this district appear to suit them. Small fruits were plentiful, particularly Gooseberries, Raspberries and Black and Red Currants. Strawberries did not yield quite so well as we expected, but the rains helped the late varieties, which were good. The soil of this district is mostly of a light nature, with a gravelly or chalky subsoil. *S. W. Tucker, Longford Castle Gardens, Salisbury.*

ENGLAND, N.W.

Cumberland.—A semi-tropical April followed by a semi-Arctic half of May proved disastrous to the fruit crops all round. All fruits trees bloomed most profusely, but the frost was too severe for Apples and such other fruits that were in flower at that period. There is one cheering exception, The Duke Strawberry yielded a good return. These gardens are two hundred feet above sea level, not far from a river. *J. Service, Holme Hill Gardens, Dalston.*

Westmoreland.—All fruit trees gave great promise for a bountiful yield and there would have been a record crop, but we experienced one or two severe frosts in May which did immense damage in this district and to Black Currants especially. Strawberries were the best crop harvested for the past ten years, the varieties being The Duke, Royal Sovereign and Givon's Late Prolific. *James Jeffrey, Lowther Castle Gardens, Penrith.*

(*To be continued.*)

PUBLIC PARKS AND GARDENS.

Mirfield Urban District Council has appointed a committee to consider the provision of a recreation ground at Northope.

Application will be made to the Ministry of Health by Orrell Urban District Council for permission to borrow £1,025 for the purchase, fencing and laying out of a recreation ground.

At a recent public meeting held at Shaldon, Teignmouth, a consultative committee was appointed to arrange for the laying-out of the land given by the late Col. Graeme for a recreation ground.

Epsom Rural District Council proposes to purchase the Brewery Meadow, Cobham, for a recreation ground.

Two new parks, provided by the Corporation of Glasgow, were formally opened to the public on Tuesday, September 28. Originally Maryhill Park, which occupies a commanding position in the northern district of the city overlooking Campsie hills, covered a comparatively small site, but owing to the rapid growth of the population in that area, additional ground was acquired in 1922, which permitted an extension of the planted section and the provision of up-to-date tennis courts and bowling greens. Newlands Park is situated on the south side, and the ground, extending to ten-and-a-half acres, which was gifted by Sir John Stirling Maxwell, Bart., has been attractively laid out. Its chief features are a rock garden and ornamental pond, herbaceous border and shrubberies. Roses are also extensively cultivated. These additions bring up the number of parks in Glasgow to thirty-one, exclusive of forty-one open spaces, and it is estimated that 4,350,000 people attended the band performances and concerts or took part in games during the past year. The cost to the city in that period was £321,000, of which sum £90,000 was absorbed in interest charges, sinking fund and sustenance accounts.

NURSERY NOTES.

DAHLIAS AT CRAWLEY.

No flower has greater variation of form, none a more beautiful range of colours, is more easily cultivated, or has been improved to such an extent in recent years as the Dahlia. The types are widely different and nothing could be more unlike, so far as form is concerned, than Pompon and Single Dahlias, Show and Cactus Dahlias, Collerette and Paeony-flowered Dahlias, and so on through the whole range of the sections into which the flower is divided. There are, beside those mentioned, Star Dahlias, Decorative Dahlias, Camellia Dahlias, Mignon Dahlias, Charm or Miniature-Paeony-flowered Dahlias, Large-flowered Singles, Clematis-flowered Dahlias and Anemone-flowered Dahlias, some of which types have been evolved during quite recent years and within the memory of many of our readers.

The Dahlia seems to possess unlimited possibility of evolving new types and forms and no one would be surprised if many other new sections were added as the years go on, for raisers are taking a keener interest than ever in the flower, which is also finding great favour with the general public. It is true that some of the types, such as the Show and Cactus, are much less popular than they were at one time, and the reason is not far to seek, for the newer classes have greater decorative value in gardens, although they may not be so suitable for exhibition as the others mentioned.

At Messrs. J. Cheal and Sons' Nursery, Crawley, two-and-a-half acres are planted solely with Dahlias, all sections of the flower being represented by the best varieties. Those who are interested in Dahlias and have the opportunity of visiting Messrs. Cheal's nursery in the near future are sure of a welcome and would be more than delighted with the gorgeous array of flowers which is to be seen in their Dahlia fields. The most striking thing is the wealth of flowers on the individual plants, and equally as impressive is the charming and wide range of colours which the collective varieties exhibit. There must be many thousands of sorts in this huge collection—the firm raised no fewer than 105,000 plants from cuttings this season—and the difficulty is to know how to select the best, for while none is unworthy of its place in the collection, it would be, of course, impossible to grow them all in an ordinary garden.

Perhaps the most popular of all Dahlias at the present time is the dwarf Coltness Gem, and many would be surprised to know that Mignon Dahlias were raised by Messrs. Cheal and Sons more than twenty years ago, although not that particular variety. Credit for obtaining this useful type of dwarf Dahlia is due to both Messrs. Cheal and Sons and Mr. Girdleston, and the Crawley firm have many varieties of this type of other colours which are considered as good as Coltness Gem; for example, Dazzler, a pretty orange-scarlet variety; Etna, of crimson-scarlet colour; Grace, bright orange; Meta, buff, suffused with red; and Pembroke, a yellow variety which is recommended as a companion to Coltness Gem for bedding.

Crawley is the home of the Star Dahlia and of all the numerous varieties of this type, the old White Star is still unsurpassed. With each year fresh novelties are sent out by the firm and of the newer sorts, Milton Star, bright salmon-pink with rose shading; Charlwood Star, with orange-coloured florets tipped with red; and Crimson Star, a rich velvety crimson-scarlet variety, are all of superior merit, whilst the older Gatton Star, Horsham Star and Ifield Star are equally effective. Quite a number of the old show Dahlias are grown by the Messrs. Cheal, and growers would be advised to plant a few of these beautiful flowers, for some of them are of great garden value. A good half-dozen sorts in this section are Mrs. Saunders, with yellow florets tipped with white; Chieftain, a purple-lilac variety; Victor, maroon; Gracchus, bright orange; Doreen, silvery-pink; and Thomas Pendered, light yellow.

The Pompons, which are like miniature Show Dahlias, are also very pretty, and those who have room in their gardens would do well to include a few varieties, such as Little Beeswing, yellow, with red on the edges of the florets; Regulus, rich rose-purple; Nerissa, soft rose; Girlie, pinkish-mauve; Glow, rich coral; and Electra, deep orange. The Cactus Dahlia is a fine flower for exhibition, but many of the best exhibition varieties are very disappointing when grown in gardens because of their habit of producing the blooms on such short stalks as to be almost hidden by the foliage; but there are a few good garden Cactus varieties, and some of these are excellent not only for a display in the open but for furnishing cut blooms for indoor decoration. The old variety, Mary Purrier, with rich crimson flowers, is a desirable sort, and so are Mrs. Forrester Paton, crimson-scarlet; Edith L. Jones, old gold deepening to a rosy bronze; Edgar Jackson, coral red; and Mrs. A. Harvey, salmon-pink.

With regard to Collerettes, there does not seem to have been much advance in recent years over many of the varieties which appeared soon after this section was brought prominently to the notice of the public. The best of the dark-coloured Collerettes is Admiral; the tone is a dark maroon, against which the white collar shows very conspicuously. Mrs. O. M. Courage is another fine variety of this type, coloured deep carmine with a pure white collar, and so is Circe, which is white with a lavender sheen and a very pretty white collar.

The Single Dahlias, which are very charming flowers, are cultivated extensively by Messrs. Cheal and Sons, whose collection is one of the most complete in the country. These Dahlias, however, are not found often in gardens, although why they are not popular is difficult to understand, for nothing could be more beautiful than a fine plant of, say, Frank Galsworthy, Lemur, with foliage almost as beautiful as the flowers; Winona, Columbine, or Beacon, covered with a wealth of their pretty flowers. It is, however, in the Decorative section that most interest is taken now-a-days, and in this class may be embraced the Paeony-flowered and true Decoratives. No finer subject for giving a display of pretty flowers in autumn is found in any other plant or plants, and the variation in the tints of these handsome Dahlias is most surprising. Most of the varieties have long, wiry stems that raise the flowers well above the foliage, and they appeal to all, either in the garden or when cut and used in vases. Of the larger Paeony-flowered varieties, a choice selection includes Snowdrift, white; Lady Greer, shell-pink; Liberty, terra-cotta; Hon. Mrs. Phillips Roberts, bronze suffused with rose; Dream, salmon; and Mark, scarlet, whilst of the charm or miniature-Paeony, Our Annie, shrimp-pink with a yellow base; Picture, orange and gold suffused with pink at the tips; Amos, scarlet; Lovely, rose-pink; and Trixie, scarlet, are all very free and highly decorative plants. The large Decorative Dahlias, which are very popular for garden decoration and for cutting, especially for harvest festivals, include a wealth of lovely colours. Of the newer sorts of this type, mention may be made of Mrs. A. R. Mountain, pink with a silver sheen; Berengaria, orange shaded with gold; and Prestige, deep orange with a darker centre; whilst of the older sorts of this type, Ben Lomond, King Harold, President Wilson, Remembrance and The Prince offer a good selection.

Some of the Camellia-flowered varieties are very useful for massing in beds, and they are especially valuable for planting in parks where a bold effect is desired. Barlow's Bedder, Crimson Flag, and Tipsy have been introduced in some of the London parks; Carine also makes a very fine bed; the plant is very free and the flowers are a beautiful terra-cotta shade. Others in this section worthy of notice are Marianne, apricot, Raider, cinnamon and Ulick, white with just a touch of mauve. The varieties touched on represent but a very few in the extensive collection, which also includes large beds of seedlings raised at Crawley. We congratulate Messrs. Cheal and Sons on the excellent cultivation of their plants, and for their efforts in sustaining interest in these delightful autumn flowers.

APIARY NOTES.

Last month I wrote of feeding bees for winter. Equally as important as food is the matter of housing. American practice, where stocks are buried in cellars all through the winter, has proved that the consumption of stores is materially affected by winter conditions. The stock which is congenially housed will use so much as 10 lbs. less of stores then the one which is restless and uncomfortable. In our climate this cellar-wintering is not necessary, but that only means all the greater care to give each stock every facility for wintering as comfortably as possible. It is a saving in expense first of all.

But expense is the least consideration in such a matter; the welfare of the bees is paramount. Now, on this point, what follows is somewhat heterodox teaching. But from long and close study, together with a large experience, the writer is convinced that the advice is sound. Let the usual methods be recapitulated. We are told to cover up the frames warmly with quilts, taking care to make a bee space over the top of the frames. Then to close the entrance to a small aperture. The roof must be water-tight, but good ventilation must be provided. Some writers advocate packing the hives in outer cases.

Now, what is it that we find when bees are in natural quarters? An old limb of a tree is the usual resort of wild swarms. I have seen a dozen such limbs hanging against a wall in Italy. Incidentally, I may state, there was deep snow everywhere. These hollow logs were hooked down for me to inspect. The cluster hung motionless at the top, and against the solid end of the wood. The other end was wide open. Consider now what had happened. The bees came to that hollow limb, went to the top, and, up against the solid wood, began building. Every comb was built solid to the top, and fastened to it. No quilting above their heads, and no bee-space above the frames. Neither was there ventilation at that end of the log. The result was that the bees could control ventilation perfectly, and there was no possible risk of draughts. As they clustered in cold weather they were insulated by walls of wax, except at the bottom, and the bodies of the outer layer of bees soon insulated them there. It was as if you had wrapped those bees up in a wax bag and stuffed them into a hollow log. No draughts, no damp, every economy of heat, and therefore every economy of food, with all that means—restfulness, no unseasonable flying, no spring dysentery.

It is my contention that Nature is the best guide. Rarely can we improve upon her methods. Therefore, in housing bees for winter let this picture of Italian log hives be the ideal. Make the hive correspond as closely as possible. To do this, instead of putting absorbent fabrics on the top of the frames for winter, place a board, the size of the hive, over the frames, and wax the side nearest to the bees. Have no bee-space between that board and the frames. If a passage near the top of the frames seems desirable, make one or two three-eighth-inch holes through the combs. But this is rarely, if ever, needed by the bees in our climate. If it were possible to close the ends of the frames it would be better still, but with modern hives this is not possible.

The whole idea in wintering ought to be to give the bees compartments no larger then the spaces between the combs, so that no heat is required from them but that necessary to warm such a space; and then to see that there is no avoidable dissipation of the heat generated. If to this is added the avoidance of all forms of damp, especially damp-retaining materials, such as ordinary fabric quilts, then the bee-keeper has done all in his power to ensure successful wintering. Given solid slabs of sealed honey at the outside of the brood nest no ingress of damp air, beyond that drawn in by the bees from the entrance as they want it, and no material that will hold water anywhere about them, bee-keepers will find 100% of their stocks come through and show vigorous life in the spring.

In America with cellar-wintering, bee-keepers go one better, even, than this. They control the moisture suspended in the air of the cellar, by placing open barrels of unslaked lime about. If they find such precautions needful in a climate even drier than ours how much more should we strive to give our bees dry surroundings.

Damp, not cold, is the foe to fear. And so far as cold is concerned it only needs to be mentioned that whatever is used to cover the bees it will not contribute actual heat. We can merely conserve it, or dissipate it. We say that wool is *warmer* than cotton, but we know when we say it that we do not mean there is actual warmth in either. So a wooden roof over their heads, well coated with wax, is as warm for bees as inches of fabric and infinitely drier.

So far as the entrance is concerned, do not close it overmuch—the whole breadth of the hive is quite safe provided it is protected from the entrance of mice, but with a large, *i.e.*, wide, entrance, it is well to set the body containing the bees on the top of an empty body, or lift, so that the cluster is well above the floor level.

PROBLEMS OF POTATO CULTURE.

THE annual conference of experts associated with the Scottish Potato industry was held at Ayr, on Monday, September 27, on the occasion of the exhibition of seedlings raised by Messrs. McGill and Smith at their trial grounds at Alloway Mill. The Board of Agriculture was represented by Messrs. T. Anderson, A. Millar, J. B. McCullum and A. S. Fortune; Irish Ministry of Agriculture: Messrs. W. Davidson, Dublin, and W. Smythe, Belfast Plant-Breeding Station: Mr. W. Robbe; Colleges: Messrs. D. G. O'Brien, E. T. McNaughton and J. Cochrane (west of Scotland), and W. M. Findlay, Aberdeen (north of Scotland); Raisers: Messrs. Donald McKilvie, Zamlash, A. W. McAllister, Dumfries, and C. T. Spurce, Dunbar, and the company also included twenty-five farmers.

As showing the extensive character of the operations carried on by the enterprise of a private firm, it may be stated that 3,600 seedlings were planted this season. Of that number approximately 3,000 came to maturity, and 193 of these were selected as being considered worth growing on. In the past the remaining seedlings were discarded, but as many seedlings did not get a good chance in the first year, a single tuber of every promising plant was now retained and given a further test.

The company was invited to inspect seventy-five specimens of seedlings which were planted on April 1 and grown on land that had received a light dressing of horse and pig manure ploughed in, and a dressing of a special Potato manure in the drill at the rate of twelve hundredweights to one acre. Six tubers of each variety were grown between control varieties consisting of Epicure (early), Great Scot (second early) and Field-Marshal (late), and the product of four roots were arranged separately with number and weight attached.

With the object of ascertaining the best seedlings the visitors were provided with voting cards on which they were invited to place ten in the order of merit. When the votes were analysed it was announced that seedling 8,256 headed the poll with the total of 295 points, and that seedlings 8,215 and 11,234 tied for second place with 266 points each. The winner is one of a group of promising seedlings obtained from crossing British Queen with 8,219, an Alloway seedling of 1921, which itself is a cross between Sutton's Abundance and Majestic. It is a second-early of handsome, round shape and gave a yield equal to 16 tons 12 cwts. to the acre.

At the conference following the luncheon the discussion was opened by Mr. McAllister, who in answering the question "Is there any room for a new Potato," pointed out that there was a big field for raisers to exploit in the production of an immune early. Some improvement was required in the shape of the second earlies, certain of which were too deep in the eye. As for the late sorts, the proper variety for England had been found in King Edward. Trade was not bright for the farmer as the prices were bad and there was a good deal of disease in the crops.

Mr. Matthew Howie, Irvine, emphasised the importance of quality and commented on the difficulty of obtaining a Potato which gave bulk and quality at the same time.

Mr. Watson, who has charge of the Alloway trials, invited the speakers to give their views on the inheritance of leaf-roll disease and to explain how it was that if Potatos were left till the haulm withered there was not so much blight in the tubers as when they were lifted at an earlier stage.

Mr. Anderson maintained that it was an impossible proposition to place quality first in the trial of seedlings. They must start with weight and shape and risk quality, which should receive priority when the Potatos were put on the market. It would appear that mosaic disease was transmitted through the seed, and possibly leaf-roll also, but they did not know definitely what the infective principle of the latter disease was. Soil covering afforded a certain amount of protection from blight, and the trials at Philipstown had shown that infestation was chiefly confined to the tubers that were exposed on the top of the drills.

Dealing with the subject of Potato testing Mr. Millar said it was impossible to select a really good seedling by the appearance of the haulm, and that the real test was its performance. That could best be done by subjecting the tubers to all the troubles to which they were likely to be exposed and trials could not be reliable unless the seedlings were properly grown and compared with standard varieties and judged by men acquainted with Potatos.

Mr. O'Brien supported Mr. Anderson's view with respect to the position of quality in trials of seedlings. He placed weight first, disease-resistance second and quality next.

Mr. Davidson complimented the firm on their results, and said there was not a firm in Ireland to do work of this kind for them. As regards mosaic and leaf-roll diseases, there was no doubt at all that the disease could be transmitted from the true seed, but in dealing with blight they were only surmising. He explained the measures that had been taken to revive the old Champion Potato in Ireland. Among the poorer classes no Potato ever enjoyed the same popularity and there were many people to-day who would rather have one of the old Champion to eat than three of any other variety. Half-a-dozen immature plants were obtained in Banffshire, and on investigation Dr. Murphy could find no trace of mosaic on any of them. From these thirty to forty hundredweight of seed was obtained, and although the year's crop had not been dug, the foliage was still green and the leaflets were double the size of those of the old Champion. In judging new varieties his four standards would be Up-to-Date, Arran Chief, British Queen and Epicure. He regarded Mr. McKilvie's No. 480 as next to Arran Chief in the immune line, and he expected that it would turn out quite as good.

Mr. Smythe considered there was no variety to equal British Queen for quality in the north of Ireland, but he would like to see an immune Up-to-Date.

Mr. McKilvie remarked that he was agreeably surprised on his first visit to Alloway to find so many splendid seedlings. He knew the difficulties and disappointments of raisers and warned them neither to be elated nor depressed when they got a stone of tubers to the root, as such a thing might happen and the merit disappear. Personally, he had put the pig out of account. His idea was not six large tubers and a number of small at a root, but ten or twelve Potatos that were good for the table. He considered that one of the most important qualities of the Potato was resistance to blight; sometime or other this disease will let the grower and the country down, and for that reason he would place resistance to blight in the forefront.

Mr. John Hounch, Girvan Mains, maintained that many of the questions discussed referred to work that should be done by other bodies and not be left to private individuals. Until they got a body willing to undertake research work they would not be fairly treated by the Government of the day. In a passing reference to his gift of Auchencrieve estate, he hoped that other donors would be more successful, but it would not be prudent for him to say anything regarding the merits of the question as there was so much being done behind the scenes.

Mr. McGill asked why it was that when an author writes a book or a playwright produces a successful play they got paid for their work, while Mr. McKilvie had spent a lifetime raising new Potatos and had not been fully rewarded for his work. The man who raised Kerr's Pink could not get a living at home and had to go abroad.

Mr. Findlay told of the attempts that had been made at Aberdeen to improve Golden Wonder, the best quality Potato in the market. Unfortunately, as they all knew, it is badly affected by mosaic. Stocks were obtained from one hundred different places and not one was free from that disease. Starting in 1920 with about 150 plants they retained half-a-dozen that were fairly free, but two of the six were badly affected in the second year. Now they had almost got a free stock, and if it could be kept free he was satisfied that the average yield would be increased by twenty to twenty-five per cent. As the result of experiments it was also found that the yield of Golden Wonder could be increased and the quality improved by sprouting the seed tubers.

Mr. John Gibb, Bishopston, thought it would be a mistake to register too many varieties. They should be sure of the utility of the Potato.

HOME CORRESPONDENCE.

Cantaloup and Water Melons.—When grown in heated frames we had very few fruits from the Cantaloup Melon and none of the Water Melons set fruits. At my suggestion the lights were removed completely from the frames, when both varieties started to set freely, the Water Melons all over and the Cantaloups near the hot water pipe. Next year we shall grow these two Melons exactly in the same way as Vegetable Marrows. Aubergines (four varieties), Capsicums (ten varieties) and Cape Gooseberries (two varieties), succeed admirably under similar treatment, the lights in this case having been removed since the beginning of June. The Aubergines have borne five to eight immense fruits on each plant, thin-skinned fruits full of pulp. The plants are stopped during the second week in September to enable the late fruits to develop. *William Lawrence, Burford Lodge, Dorking.*

Aster Barr's Pink.—This new Michaelmas Daisy is a fine one, however considered, and it appears to be by far the finest of the so-called pink-flowered varieties. The individual blooms are two inches in diameter and have three or four rows of ray florets; the latter are of a very bright and cheerful shade of colour that is akin to that known to ladies, among dress materials, as Cyclamen One stem may carry so many as twenty flowers, but all these do not expand at one time. Last autumn this variety received the R.H.S. Award of Merit after being submitted to trial at Wisley, and at present a large number of plants, all about four-and-half feet high, are making a splendid display in Messrs. Barr and Sons' nurseries at Taplow. Aster Barr's Pink was exhibited finely a few days ago at the autumn show of the Post Office Savings Bank Horticultural Society, at Blythe Road, West Kensington, by Mr. Duncan, the Secretary, who regards it as one of the best of all Michaemas Daisies. *C.*

Gentiana Acaulis as an Edging Plant.—Mr. Puddle (on page 185) does well in recommending the use of Gentiana acaulis as an edging plant. Growers may increase their stock of this beautiful plant also by raising plants from seeds. The seeds may be gathered and sown so soon as ripe, that is, so soon as the seeds are loose in the capsule. Sow the seeds in shallow boxes or pans filled with a compost of fibrous loam to which has been added some leaf-mould and plenty of grit and mortar rubble, the whole finely sifted; a cold frame is all that is necessary for protection. When the seedlings are large enough to handle they may be pricked out, placing four or five together in small pots; place the pots in a frame until the roots reach their sides, when the plants may be plunged in ashes in the open and grown on until the pots are well-filled with roots. Plants grown in this way make ideal material for the formation of a border, as recommended by Mr. Puddle, and may be expected to flower the second year. During recent years exhibitors have displayed this Gentian at the Chelsea shows as growing in grass. I have never seen it thrive in turf. *John Boxall, Old Colwall.*

Cabbage Butterflies.—A short time ago I wrote an article for *The Gardeners' Chronicle* entitled "Cabbage Butterflies" (p. 129, August 14). My attention has recently been drawn to the fact that a correspondent, I believe Sir Herbert Maxwell, has criticised a paragraph in this article referring to the parasitising of the caterpillar by the Braconid (Apanteles glomeratus). Your correspondent accuses me of "perpetuating a fallacy" by stating that the caterpillar is parasitised whereas, according to him, it is the *egg* which is so attacked, and he quotes Fabre as his authority. The truth of the matter is that there is no evidence whatever that the egg is parasitised, and Fabre is mistaken in his conclusions in this respect. It is just possible that the parasite might lay its eggs in the fully-formed caterpillar before it leaves the egg, but it cannot be spoken of as a true egg parasite. I regret that the letter of Sir H. Maxwell should have escaped my notice until now, but I write to clear myself of an accusation of inaccuracy, and to say that the fallacy originated with Fabre and has not been perpetuated by myself. *Kenneth M. Smith, Manchester University.*

Flavour in Potatos.—The remarks on page 236 by *J. A. C.*, on Potatos, reminds me that private gardeners do not, on the whole appreciate the evil effects of manures (especially chemical fertilisers) on the flavour of Potatos. I have always found that Potatos grown without the direct application of manures are far more appreciated at the table than those which have been given a stimulant during the growing season. I have grown up to twenty acres of Potatos in fields where manure was used freely, but my employer's table was always served with Potatos grown inside the garden boundary, by request of the employer himself. In his notes, *J. A. C.* expresses the opinion that "Sharpe's Express should not be left in the ground too long." By this, I take it, he thinks it deterioriates. Does he not think this deterioration is hastened by the application of sulphate of ammonia, more especially on heavy land? I should like to know other private grower's views on this point, as it is a great advantage to bring out the full flavour of Potatos in all kinds of soils. Potato growing for private consumption is quite distinct from commercial growing, where weight of crop is the chief consideration. *H. Crowe, Kingsclear Gardens, Camberley, Surrey.*

Irish Heaths.—I was interested in the article on "The Irish Heaths," by Mr. R. V. Gifford Woolly, in the issue for September 18. In this nursery the different varieties of Menziesia polifolia grow in the most rampant manner, and some remarkable effects have been obtained quite accidentally. In one case the white-flowered variety has grown up though a bush of Berberis stenophylla diversifolia, four feet high, and in another instance it has attained a height of five feet through a bush of Hypericum Hookerianum. These are only two of many cases of a similar nature, where they form masses of flowers several feet high, from July to November. *G. N. Smith, Daisy Hill Nursery, Newry.*

SOCIETIES.

ROYAL HORTICULTURAL.

October 5.—The Hall at Vincent Square was well filled on this occasion, but the exhibits were not so crowded as at several previous meetings, consequently there was more space and greater comfort for Fellows and visitors. Michaelmas Daisies, Dahlias and early-flowering Chrysanthemums were the outstanding features.

Orchid Committee.

Present: Sir Jeremiah Colman, Bt. (in the chair), Mr. Gurney Wilson (Hon. Sec.), Mr. R. G. Thwaites, Mr. E. A. Ashton, Mr. T. Armstrong, Mr. J. C. Cowan, Mr. A. McBean, Mr. Henry H. Smith, Mr. Fred. K. Sander, Mr. Arthur Dye, Mr. H. T. Pitt, Mr. S. W. Flory, Mr. Fred. E. Hanbury, Mr. Stuart H. Low, Mr. J. E. Shill and Mr. Chas. H. Curtis.

First Class Certificates.

Cattleya Gilvus (*C. Hardyana alba* × *C. Heliodor*).—A splendidly-shaped flower with broad, overlapping petals and wide sepals, all of soft yellow colour; the lip is golden yellow, frilled, with a broad carmine frontal margin. Shown by Baron Bruno Schröder (gardener Mr. J. E. Shill), Dell Park, Egham.

Brasso-Laelio-Cattleya Elektron (*B.-L.-C. Amber* × *C. Hardyana alba*).—A fine hybrid carrying a broad flower of splendid proportions. The sepals and petals are soft yellow, the former being of slightly deeper shade than the latter. The lip is of perfect form, not too large, frilled, golden yellow in the throat, stained with purple down the centre and margined with light purple. Shown by Baron Bruno Schröder.

Awards of Merit.

Cattleya John Henry (*C. Astron* × *C. Lady Rowena*).—This beautiful hybrid has large flowers that are pure white except for a lemon-yellow staining in the throat of the lip. Shown by Baron Bruno Schröder.

Brasso-Cattleya Miranda, Low's var.—A large-flowered hybrid, with lemon-yellow sepals and petals that lack something in breadth. The big, fringed lip is soft carmine pink, with dull gold staining and veins. Shown by Messrs. Stuart Low and Co.

Cattleya ardentissima St. Albans var.—In this big flower the sepals and petals are of rich purple hue, and the large lip is royal purple with old gold veining and a pale purple edging. Shown by Messrs. Sanders.

Brasso-Laelio-Cattleya Helios (*B.-L.-C. The Baroness* × *C. Triumphans*).—This has deeper yellow sepals and petals than the other Dell Park hybrids shown on this occasion. It has also a larger lip that is rich carmine, almost a ruby-red, with exquisite veinings of old gold. Shown by Baron Bruno Schröder.

Botanical Certificates.

Bulbophyllum Medusae alba.—An unspotted form of an old and quaintly interesting Orchid; the flowers are clustered closely together at the end of the peduncle, and the elongated points of the segments are so thread-like that the whole effect is very graceful. Shown by Messrs. Sanders.

Groups.

An extremely interesting and quite attractive, group of Orchids was submitted by Messrs. Sanders, who made a feature of Cattleya Fabia alba, C. Bellona and Odontoglossum grande. Other attractive subjects were Vanda coerulea, Cattleya ardentissima var. St. Albans, with a very large, crimson-purple lip, and the yellow Laelio-Cattleya Luminosa aurea, a showy flower bearing evidence of its descent from Laelia tenebrosa.

Some very interesting plants were included in this group, notably Bulbophyllum Medusae alba with three of its clusters of creamy-white flowers; Cirrhopetalum appendiculatum, the red Broughtonia lilacina, Bulbophyllum grandiflorum, Stelis triste, Angraecum Eichlerianum and the pretty Stenoglottis fimbriata.

Messrs. Stuart Low and Co. had about a dozen attractive plants arranged in a small group; these included Laelio-Cattleya Mrs. Medo, with yellow sepals and petals; Brasso-Cattleya Ida, B.-C. Miranda, Low's var., with light yellow sepals and petals and a grand lip; and B.-C. Hannibal, Low's var., of rich mauve-purple colour. Messrs. Cowan and Co. submitted the charmingly chaste Cattleya Lady Veitch, C. amabilis alba, and the richly-coloured Laelio-Cattleya Pandora (C. Fabia × L.-C. Marmion).

The congratulations of the Committee were offered to Baron Schröder and his clever Orchid-grower, Mr. J. E. Shill, on the success of the plants exhibited; it must surely constitute a record to submit four new Orchids and gain two First Class Certificates and two Awards of Merit for them.

Floral Committee.

Present: Section A.—Mr. H. B. May (in the chair), Mr. Arthur Turner, Mr. Chas. E. Pearson, Mr. W. P. Thomson, Mr. D. B. Crane, Mr. Jas. B. Riding, Mr. J. F. McLeod, Lady Beatrix Stanley, Mrs. Ethel Wightman, Mr. Mark Fenwick, Mr. H. J. Jones, Mr. D. Ingamells, Mr. E. R. Janes, Mr. W. H. Page, Mr. A. Vasey, Mr. J. T. West, Mr. W. B. Gingell, Mr. W. A. Bilney and Mr. H. R. Darlington.

Section B.—Mr. Gerald W. Loder (in the chair), Mr. W. J. Bean, Mr. Jas. Hudson Mr. G. Reuthe, Mr. George Harrow, Mr. L. R. Russell, Mr. E. H. Wilding, Mr. W. B. Cranfield, Mr. Reginald Cory, Mr. F. G. Preston, Mr. A. Bedford, Mr. G. Yeld, Mr. R. C. Notcutt, Mr. E. A. Bowles, Mr. Charles T. Musgrave, Mr. R. D. Trotter, Mr. W. E. Baker, Mr. T. Hay and Mr. R. W. Wallace.

Awards of Merit.

Aster Mrs. George Monro.—A splendid Michaelmas Daisy of erect habit. The flat flowers, which are two inches across, are made up of several rows of narrow petals, slightly tinged with blush on milk-white ground.—Shown by Mr. E. Ballard.

Canna Ensign.—A vividly beautiful, large-flowered variety. The rich scarlet of the broad petals is enhanced by a touch of golden yellow at the base. It is a purple-leaved variety, and appears to be of dwarf, sturdy habit. Shown by Hon. Vicary Gibbs, Aldenham House.

Gentiana detousa.—The plant appeared to be of slender, spreading habit but had suffered in transit. It has narrow, green leaves, and bears large, long-stemmed flowers of a rich blue with dull green exteriors. The petals are margined with white hairs, chiefly towards their base. Shown by Lady Aberconway, Bodnant, N. Wales.

Ilex Fargesii.—A small-berried branch of this western China evergreen Holly was shown. On a superficial examination the foliage is somewhat like that of the Himalayan I. dipyrena, and, as with that species, the leaf-spines are few and small. The pale green, narrowly oblanceolate leaves are about three inches long and have purplish stalks and the same colouring appears on the young shoots and terminal buds. The bright red, medium-sized, globose berries are freely borne in clusters and are very attractive. Shown by H. Armytage Moore, Esq., Rowallane, Saintfield, Co. Down.

Groups.

Michaelmas Daisies were extensively shown, and, in several instances, the methods of arrangement were delightfully natural and artistic. Messrs. Waterer, Sons and Crisp had a large floor group which was a charming example of natural arrangement exhibiting well the grace and elegance of this autumn flower. Their principal varieties were Little Pink Lady, Margaret Ballard, Barr's Pink, Brightest and Best, October Dawn, Mons and Royal Blue. Mr. Ernest Ballard also had a large group of Michaelmas Daisies on a floor space, and he relied for effect on large quantities of a few varieties in the middle of the group, surrounded by smaller stands. A great quantity of the new variety Mrs. George Monro well illustrated its value. Margaret Ballard, Maid of Athens, Little Pink Lady, Mother of Pearl, Queen

Elizabeth and Ruby Tips, which received an Award of Merit at the recent Holland Park Hall Show, also were very decorative.

On the staging, Mr. H. J. JONES had a magnificent display of Michaelmas Daisies, amongst which several stands of Helianthus Monarch, of rich golden-yellow colour, was a beautiful foil to the relatively sombre colours of the Michaelmas Daisies. Barr's Pink showed its great merits and was easily the outstanding Michaelmas Daisy in the hall. Other varieties of value were Fairy, Maid of Athens, Blue Gem, Brightest and Best, Queen Elizabeth and Duchess. In the corner by the Tea Annexe, Mr. W. WELLS, junr., had a smaller but equally attractive display, and with such Michaelmas Daisies as Brightest and Best, Barr's Pink, Ultramarine, Mons and Esther, grouped vases of Spiraea venusta elegans, Achillea Cerise Queen and other border flowers. Barr's Pink was well-shown with Ultramarine, General Pershing and herbaceous Phloxes by Messrs. BAKERS, LTD.

Although the individual flowers are small Solidago messouriensis, which was shown in quantity by Mr. F. G. WOOD, is very effective in the mass. A large plant of Gentiana sino-ornata, Verbena chamaedryoides and various other alpines were included in the exhibit. Messrs. RICH AND CO. grouped Michaelmas Daisies, Sunflowers and Dahlias. The MISSES HOPKINS had an interesting exhibit of seasonable flowers. Mr. T. CARLILE associated Michaelmas Daisies with Gallardias, Phlox and other border flowers.

Excellent sprays of Michaelmas Daisies, including Barr's Pink, of large size, were shown by Messrs. BARR AND SONS, who also had vases of the uncommon Lilium nepalense, Schizanthus Mrs. Hegarty, various Montbretias and Nerines Hera and Rose Beauty, two splendid varieties. The former is equally as large as N. Bowdenii, more compact in the spike and of a lovely pink shade. Although not so large as Hera, Rose Beauty is much more vigorous than most Nerines, and of a rich rose-pink colour.

Some exceedingly good spikes of Delphiniums Levanda, Joy Bells, Evening and The Shah were shown with Michaelmas Daisies, Mother of Pearl, Climax, Antwerp and others by Messrs. HEWITTS, LTD. Michaelmas Daisies were associated with Berberis, Retinosporas and other shrubs by Messrs. SKELTON AND KIRBY.

An admirable exhibit of Liliums, Kniphofias and other flowers rising above a collection of well-grown hardy Ferns, was made by Mr. AMOS PERRY. He had many spikes of Lilium nepalense, from bulbs grown in India, Lilium regale and Watsoniae rosea while at one end of the collection there was a splendid batch of Cimicifuga simplex charmingly in flower.

Dahlias of considerable merit were shown by several growers. Mr. J. B. RIDING had a very fresh collection which included handsome flowers of Jersey Beauty, Beau Brummel and Tommy Atkins, large Decoratives; and Glory, Elmer D. Cook, Betty and Radium of the small Paeony-flowered varieties; Mr. J. T. WEST staged good vases of Caliph, Amos, Winter Sun, Radium and Ophelia, miniature Paeony-flowered varieties, and Grasmere, Pixie, Essex and John Fowler, Cactus varieties.

A row of shapely little Pompon Dahlias in the collection of Mr. CHARLES TURNER included Glow, Darkest of All, Harry Snook and Mars, while amongst his many Decoratives were Christine, Apollyon, Fireflair and Sunset. Messrs. J. STREDWICK AND SON had immense blooms of Jack Hobbs, Josephine Adair, Rose Taylor and W. D. Cartwright. Messrs. J. CHEAL AND SONS showed Champion, Edith Page, Mrs. F. Paton and Mary Purrier, Cactus varieties, and Our Annie, Norah Bell, Lovely and Fusee amongst the miniature Paeony-flowered Dahlias. In the Orchid Annexe, Messrs. JARMAN AND CO. had good blooms of Barbara Jacobs, Coronac, Sheila Ware and other Decorative Dahlias.

Chrysanthemums in quantity and chiefly in Decorative sprays were shown by Messrs. KEITH LUXFORD AND CO. Their collection included Cranford, yellow; Phoenix, rich bronze; Lichfield Peach and Cranford Cream, as sprays, with Armorel, bronzy salmon, Cranford Pink and Crimson Circle, as disbudded flowers. In the centre of the group there was a vase of Belle Chamoise, a splendid large Japanese sort of rich yellow colour. Mr. WM. SYDENHAM had vases of Dick Barnes, of rich colour; Goldfinder, Horace Martin, Early Buttercup and Martin Reed with a collection of Michaelmas Daisies.

Disbudded blooms of September Glory, bronze, Bronze Delight, Sanctity, white, Pink Dame and Silver Queen, soft pink, were shown in a good collection of Chrysanthemums by Mr. A. G. VINTEN, while Mr. WM. YANDELL set up vases of Almirante, Crimson Circle, Cranford Yellow, Salmon Profusion and other Decorative varieties.

A large collection of hardy shrubs arranged by Messrs. J. CHEAL AND SONS, included well-coloured branches of Acer tataricum, Acer rubrum fulgens, Amelanchier arbutifolium and various Berberries, with a small plant of Populus lasiocarpa bearing immense, cordate leaves. Flowering shrubs were represented by Abelia grandiflora, Clematis grata, Desmodium penduliaefolium and Tamarix odessana. Messrs. L. R. RUSSELL, LTD., had a good collection of Tree Ivies, and Mr. J. KLINKERT showed Topiary specimens.

Roses were shown by Mr. WALTER EASLEA and Mr. J. H. PEMBERTON. The former had good vases of Madame Butterfly, Hoosier Beauty, W. F. Dreer, Golden Emblem and Los Angeles, while the latter included Rev. F. Page-Roberts, W. F. Dreer, Los Angeles, Nur Mahal and Penelope.

The Hon. VICARY GIBBS, Aldenham House, Elstree (gr. Mr. E. Beckett), staged an admirable collection of Pentstemons in named varieties. Good collections of Carnations were displayed by Mr. C. ENGELMANN and Messrs. ALLWOOD BROS. Messrs. ISAAC HOUSE AND SON set up admirable flowers of their Scabiosa caucasica varieties. Mr. B. PINNEY and Mr. J. J. KETTLE had small collections of Violets.

Fruit and Vegetable Committee.

Present: Mr. C. G. A. Nix (chairman), Mr. J. Cheal, Mr. P. C. M. Veitch, Mr. Geo. F. Tinley, Mr. T. Pateman, Mr. W. F. Giles, Mr. A. Bullock, Mr. F. Jordan, Mr. A. Poupart, Mr. E. Neal, Mr. E. A. Laxton, Mr. W. H. Divers, Mr. E. A. Bunyard, Mr. E. Beckett and Mr. A. N. Rawes.

Amongst the novelties submitted was a very promising Plum raised from Coe's Golden Drop crossed with Giant Prune and named Lord Lambourne. The shape is somewhat like that of Pond's Seedling, and it is a large fruit of that type. The flavour is moderately good and the appearance excellent, so that it is likely to be valuable for commercial purposes. It was recommended that the variety be included in the trial of commercial fruits at Wisley. It was shown by Mr. R. STAWARD, Ware Park, Ware, who also exhibited a very pretty seedling Peach raised from Peregrine crossed with Thomas Rivers. The fruits shown were from the open, and it is possible that the variety might develop a richer flavour under glass.

GROUPS.

Sir WM. LAWRENCE showed a few pot plants of Capsicums in variety, including Glory, with deep red, conical-shaped fruits; White Spanish Bull, a big yellow variety of very irregular outline, and Black Mexican and Mild Spanish. Mr. G. TRINDER showed the fine yellow Raspberry Golden Hornet, which received the Royal Horticultural Society's Award of Merit when tried at Wisley. Mr. J. J. KETTLE again exhibited autumn-fruiting Raspberries of the Lloyd George type.

READING AND DISTRICT GARDENERS'.

THE first fortnightly meeting of the autumn season was held in the Abbey Hall, Reading, on Monday, the 27th ult., and was a great success in every respect; the attendance was large, the exhibits grand, and the lecture most interesting and enjoyable. Mr. F. J. Green presided.

A special feature was the magnificent display of autumn flowers, both in the competitive and non-competitive sections. Roses were strongly represented, upwards of two hundred and-fifty blooms being staged, while Chrysanthemums, Dahlias, Pentstemons and Michaelmas Daisies were also shown well. In the class for three vases of outdoor flowers there were nine entries, the competition being very keen. The first prize was awarded to Mr. A. H. FULKER, Elmhurst Gardens, Reading, the second to Mr. A. H. Dow, Calcot Park Gardens, and the third to Mr. M. Goddard, Bear Wood Gardens. In a class for one vase of Roses there were seven entries, and Mr. J. WYNN, Hommonds Gardens, Checkendon, was first; Mr. A. W. GOWER, Calcot Grange Gardens, second; and Mr. H. WYNN, Luern's House Gardens, Goring Heath, third. In the non-competitive section a First Class Certificate was gained by Mr. E. A. BEAUMONT, The Lodge, Earley, for an excellent display of Chrysanthemums, the varieties September Glory, Mrs. R. Hamilton, and Almirante being particularly fine. Mr. A. W. FULKER received an Award of Merit for a fine collection of Dahlias.

The lecturer for the evening was Mr. A. J. Cobb, Lecturer in Horticulture to the Reading University, and his subject, "Roses." By the means of a splendid series of lantern slides, kindly lent by the National Rose Society, he showed the correct and incorrect way of planting and pruning Roses. He referred to many of the species of Rosa which have been used in the raising of garden Roses, and touched on many of the best varieties in the various sections.

NATIONAL CHRYSANTHEMUM.

THE Floral Committee met at the R.H.S. Hall, on Monday, October 4, when a dozen or so of novelties were submitted and two awards were granted as follow:

FIRST CLASS CERTIFICATE.

Red Ensign. II. 1.a.—A large-flowered Japanese variety of exhibition size and grown out of doors. The broad florets are of brilliant chestnut colour with old gold reverse, the latter colour showing prominently on the incurving ends of the florets; a very handsome variety. Shown by Messrs. H. WOOLMAN AND SONS, Shirley, Birmingham.

COMMENDATION.

Mrs. Jas. Whitehouse.—II. 1.b.—A free-flowering early variety; light crimson with golden reverse; the florets are comparatively short making up a firm flower. Shown by Messrs. H. WOOLMAN AND SONS.

MORAY FIELD CLUB.

THE members of this Club closed their delightful summer outings by a visit to the famous gardens and woods of Orton. The proprietor, Mr. Wharton Duff, not only gave every facility to the visitors, but also accompanied them on their tour of inspection, while Mrs. Wharton Duff, who is an enthusiastic member of the Royal Scottish Arboricultural Society, gave interesting information about the remarkable trees and shrubs to be seen on the estate. The gardener, Mr. Thomas Macdonald, conducted the party through the extensive gardens. Although the season is now well advanced, there was a gorgeous display of flowers, especially of Sweet Peas and Phloxes. Admiration was expressed for the rich, massed beds of Antirrhinums, Pentstemons, Verbenas and Statice, and likewise for the exquisite Roses and a fine array of Chrysanthemums just coming to their best. Other things that attracted notice were the crimson and other Geums, Rudbeckia laciniata, Artemisia lactiflora, the very rare and handsome Bush-Mallow, Rose Queen Loosestrife, Echinops, Olearia Haastii, Antholyza paniculata, and the long purple-flowered Buddleias, although these had almost finished blossoming. In the extensive orchard was a magnificent crop of Apples, and the woods adjoining the mansion house contain grand old trees.

The Rev. George Birnie, the president of the Club, expressed to Mr. and Mrs. Wharton Duff the warm appreciation the members felt for their great kindness and hospitality.

ANSWERS TO CORRESPONDENTS.

CLUB ROOT DISEASE.—*E. A. M.* So far as we are aware coal ashes do not act as a preventive of Club Root, nor do we think that King Edward Potato is more liable to injury by slugs than other varieties.

COSMEAS.—*E. A. M.* There is a slight difference in the growth of Cosmeas, and now and again a plant will grow much taller than the rest. In the newer strains, however, this failing is being steadily eliminated.

DAPHNE MEZEREUM.—*Old Reader.* Sow the seeds now, as soon as they are ripe, in pans of well-drained, sandy soil. Place the seed-pans in a cool greenhouse or cold frame. Cuttings are not easy to root, and any that do seldom make such good plants as seedlings, hence it is not a method of propagation favoured when plants are so readily raised from seeds.

DIVIDING ASPIDISTRAS.—*Glenavon.* If you have a greenhouse you may divide your Aspidistras plants at almost any time, except in the middle of winter. but spring is the best season, as the plants will have a long growing season afterwards. Regarding the method of dividing them, it depends on what you require; if you wish to obtain plants quickly you may divide them into pieces with five or six leaves attached, but if you require a large stock, shake all the soil from the roots and separate the plants into portions with one, two or three leaves and a few roots attached. Placed in a temperature of about 50° they should soon make fresh growth. Afford the roots water very carefully until a quantity of fresh roots have developed.

GARDENER'S NOTICE.—*W.* As you gave four weeks' notice on Monday, September 6, such notice did not expire until Monday, October 4. You will be entitled to wages up to that date, but not to a full week's wages in respect of that week.

HORTICULTURAL WAGES.—*A. R.* Employees in nurseries come under the same category as agriculturists, so far as wages are concerned, but for the purpose of securing the best men for the work nurserymen and market gardeners almost invariably pay a somewhat higher wage than the recognised minimum for agricultural workers.

NAMES OF FRUITS.—*A. H.* 1, 2, 4, 19, 25 and 29, Bramley's Seedling; 3 and 5, Lord Derby; 6, Orange Goff; 7, Bismarck; 8, Loddington; 9, Cellini; 10, decayed; 11, Beurré de l'Assomption; 12, Easter Beurré; 13, Cox's Pomona; 14, Wormsley Pippin; 15, Hanwell Souring; 16, Lane's Prince Albert; 17, Stirling Castle; 18, Small's Admirable; 20, Lemon Pippin; 21, Golden Ducat; 22, Williams's Bon Chrétien; 23, Maréchal de la Cour; 24, Radford Beauty; 26, Flower of Herts; 27, Charles Ross; 28, Shepherd's Fame; 31, Worcester Pearmain; 31, Warner's King. *D. G.* Pear British Queen; Apple, Reinette Franche. *B. J. F.* 1, Doyenné Boussoch; 2, Duchesse d' Angoulême; 3, Passe Colmar.

NAMES OF PLANTS.—*P. A. V.* 1, Sciadopitys verticillata; 2, Oxydendron arboreum; 3, Leycesteria formosa; 4, probably a Sedum, but impossible to name in the absence of leaves. *E. G.* 1, too shrivelled for identification; 2, Picea Morinda; 3, Sciadopitys verticillata; 4, Abies Pinsapo (Spanish Fir); 5, Hippophae rhamnoides; 6, Photinia serrulata; 7, Cordyline (Dracaena) terminalis Richmond Gem; 8, Acalypha marginata. *W. H. S.*, Myrtus tarentina. *G. W. C.* Nerium Oleander, a double-flowered form. *F. F.* Rosa bracteata ((The Macartney Rose). *J. S.* 1, Phytolacca decandra; 2, Cannabis sativa. *H. C.* Rudbeckia grandiflora. *E. C. B.* Olearia Haastii.

PARASITE ON GORSE.—*D. M.* The parasite on the Gorse is the Lesser Dodder, Cuscuta Epithymum, an annual, leafless herb. It infests various plants, including Thyme and Ling, as well as Gorse, and is an example of a climbing plant twining in the opposite direction to the sun's apparent motion. The stems send out numbers of little haustoria by which they attach themselves to their host.

PEACHES WITH SPLIT STONES.—*J. R. B.* Stone splitting is caused by a lack of lime in the soil and by the roots entering a cold, inert subsoil. The soil conditions may be improved by careful attention to drainage, and by lifting and placing the roots in genial soil in the immediate future. In the meantime prepare the corrective agents, which may consist of old plaster, old lime, brick rubble, burnt earth, etc. Add one part of these materials, with a fair sprinkling of bone meal, to a rather strong calcareous loam. Make the border firm and there should be no further trouble with stone splitting.

PEARS DISEASED.—*J. M.* Your Pears are affected with brown rot disease caused by the fungus Monilia fructigena. All fruits showing the slightest signs of the disease should be removed and destroyed by burning, and dead or cankered twigs should be treated similarly. Next season, when the leaves are half-grown, spray the tree with a dilute solution of Bordeaux mixture.

PERPETUAL-FLOWERING CARNATIONS.—*J. F. S.* When the young growths on your Carnations are about three inches in length, just break them out with a heel and insert them as cuttings in a mixture of equal parts of soil and silver sand. Water the soil thoroughly and stand them in a box, covering the same with a sheet of glass. Wipe the glass each morning with a sponge or cloth to remove the condensed moisture, and replace it directly afterwards. The box may be stood in a cool house in which the cuttings will form roots in about a month. The glass should be removed so soon as it is seen that the cuttings show signs of growth.

PRESERVING CONES OF CONIFERS.—*T. C.* In order to preserve cones of various species of Abies, Araucaria, and others that fall to pieces when ripe, it is necessary to net the cones so soon as they are collected. The best time to collect is so soon as they are mature. Netting may be carried out by means of strong black or brown thread, placing vertical and transverse bands about one-third-of-an-inch apart on large cones and closer on small cones. It is also possible to prevent the cones from breaking up by dipping them in thin glue, instead of netting them, but the glue detracts from their value by giving them an unnatural gloss and colour.

SEEDLING DAHLIA.—*A. E. M.* The seedling Dahlia is a Collerette variety, such as is readily raised from a packet of seeds. The florets are misshapen and the pistils and stamens commonly called the "boss," are out of all proportion to the florets. The variety would make a pretty display as a garden flower, though it would be useless as an exhibition Dahlia.

STRAWBERRY PLANTS FAILING.—*M. L. F.* Eelworms were present in the growing points and the leaf bases of the plants sent. This fact, together with the appearance of the plants, would indicate the presence of "Cauliflower" disease, and if you have noticed deformity at the time of blossoming, this would tend to confirm our opinion. Research has not definitely found a means of proving eelworms responsible, but in the meantime it would be advisable to destroy the present stock and replant healthy runners on new ground.

Communications Received.—J. S.—H. P.—A. B. H. J. N.—F. T. W.—A. E. F.—H. T. C.—C. S. S.—F. W. O.—C. R.—C. I.—W. H.—A. D. W.—J. P.—R. W. R.—H. M.—C. B.—E. P.—R. H. G.—F. J. W.

NEW HORTICULTURAL INVENTIONS.

THESE particulars of New Patents of interest to readers have been selected from the Official Journal of Patents, and are published by special permission of the Controller of H.M. Stationery Office.

LATEST PATENT APPLICATIONS.

22,141.—Derwent Foundry Co. (1920), Ltd.—Lawn Mowers. September 8.

22,199.—Marsland, E. C.—Fencing bracket. September 9.

21,425.—Browne, D. Hoes. August 31.

21,789.—Fleischer, P.—Method of utilising electric currents for promotion of plant growth. September 3.

21,385.—Hickley, H. N.—Plant supports. August 30.

SPECIFICATIONS PUBLISHED.

257,644.—Rubber Service Laboratories Co.—Insecticides.

257,668.—Jerram, A. E.—Transporters for lawn mowers and like machines.

257,386.—Ollis, W. H. F.—Gardening Implements.

257,419.—Edwards, R. W.—Cutting mechanisms for lawn-mowing machines.

229,699.—Farbenfabriken vorm, F. Bayer & Co.—Plant protection media.

ABSTRACT PUBLISHED.

Treatment of Growing Plants.

Patent No. 254,895.

Radio waves to assist the growth of plants is a suggestion of Messrs. W. Boot and J. W. Gaze, of Tramway House, Trent Bridge, Nottingham. The plants are trained to climb over horizontally disposed aerials or metallic wires, tapes, etc., arranged parallel with one another in a vertical plane in proximity to the plants and carried by and electrically insulated from upstanding end supports. The wires may be connected to posts through insulator wires or cords and hooks. They extend parallel to the ground along a row of plants, and the plants may be fastened to them or entwined around them. Each wire forms a separate aerial the height of which may be adjustable. The aerials may be earthed by the plants or by wires. The aerial wire may be insulated or uncovered. An extensible aerial is in the form of a closely-coiled spiral, connected to insulators of pulley type. Another consists of a tape wound on an encased reel which may be provided with a handle for rotating it. The central part of the reel is made of insulating material and bored to accommodate a suspending wire.

Printed copies of the full Published Specifications may be obtained from the Patent Office, 25, Southampton Buildings, London, W.C.2, at the uniform price of 1/- each.

TRADE MARKS.

THIS list of Trade Marks of interest to readers has been selected from the Official Trade Marks Journal, and is published by permission of the Controller of His Majesty's Stationery Office.

"FLORAVITE."

471,211.—A Chemical Compound, in solid or liquid form, for preserving and prolonging the bloom of cut flowers.—Alfred Webb, 26, Shaftesbury Avenue, London, W.1. September 8.

DENDRINE.

471,260.—Chemical Substances used for Agricultural and Horticultural purposes.—R. Avenarius & Co., Alleenstrasse 30, Stuttgart, Germany. September 1.

L'ANIOS.

460,553. — Liquid Disinfectants. — Société Anonyme Credit Minier et Industriel, 10, Place de Louvain, Brussels, Belgium. August 25.

MARKETS.

COVENT GARDEN, Tuesday, October 5th, 1926.

We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Tuesday by the kindness of several of the principal salesmen, who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general average for the week preceding the date of our report. The prices depend upon the quality of the samples, the way in which they are packed the supply in the market and the demand, and they may fluctuate, not only from day to day, but occasionally several times in the day.—Eds.

Plants in Pots, etc.: Average Wholesale Prices.

(All 48's except where otherwise stated).

	s. d. s. d.
Adiantum cuneatum per doz. ...	10 0-12 0
—elegans ...	12 0-15 0
Aralia Sieboldii	9 0-10 0
Araucarias, per doz.	30 0 42 0
Asparagus plumosus ...	12 0-18 0
—Sprengeri ...	12 0-18 0
Aspidistra, green	36 0-60 0
Asplenium, doz.	12 0-18 0
—32's	24 0-30 0
—nidus ...	12 0-15 0
Cacti, per tray —12's, 15's ...	5 0- 7 0
Celosias, 48's, per doz. ...	9 0-10 0
Chrysanthemums, in variety, 48's, per doz. ...	15 0-21 0
Crotons, doz. ...	30 0-45 0
Cyrtomium ...	10 0-25 0
Erica gracilis, 48's, per doz.	24 0-36 0
— 60's, per doz.	9 0-12 0
Erica nivalis, 48's per doz.	24 0-36 0
—60's „	12 0-15 0
—72's „	8 0—9 0
Hydrangeas, white, 48's, per doz.	24 0-70 0
Lilium longiflorum (Harrissii) 48's. 32's per doz.	30 0-42 0
Lilium speciosum rubrum, 32's. 48's each	2 6--3 6
— —album, 32's, 48's each ...	2 6—3 6
Marguerites, 48's per doz. ...	18 0-21 0
Nephrolepis in variety ...	12 0-18 0
—32's	24 0-36 0
Palms, Kentia	30 0-48 0
—60's	15 0-18 0
Pteris, in variety	10 0-15 0
—large, 60's ...	5 0 6 0
—small ...	4 0- 5 0
—72's, per tray of 15's ...	2 6- 3 0

Cut Flowers, etc.: Average Wholesale Prices.

	s. d. s. d.
Adiantum decorum, doz. bun.	8 0-10 0
cuneatum, per doz. bun. ...	6 0--8 0
Asparagus plumosus per bun., long trails, 6's ...	2 6—3 6
med. sprays	1 6--2 6
short ...	0 9--1 3
—Sprengeri, bun. long sprays	1 6—2 0
med. „	1 0—1 6
short „	0 4—1 0
Asters, white per doz. bun. ...	5 0--8 0
—coloured, per doz. bun. ...	4 0--6 0
Bouvardia, white per doz. bun.	12 0-15 0
Carnations, per doz. blooms...	2 0—4 6
Chrysanthemums, white, per doz.	2 0—6 0
—bronze ...	1 6—2 6
—white, per doz. bun. ...	6 0-12 0
—bronze, per doz. bun. ...	6 0-12 0
—yellow, per doz. blooms ...	3 0—5 0
—yellow, per doz. bun. ...	8 0-10 0
—pink, per doz. blooms ...	2 6—5 0
—pink, per doz. bun.	9 0-10 0
—specimens, per doz. blooms...	8 0-12 0
Cornflower, blue, per doz. bun.	2 6 3 0
Croton leaves, per doz. ...	1 9—2 6
Fern, French, per doz. bun.	10 0-12 0
Forget-me-not, per doz. bun.	8 0-10 0
Gardenias, 12's, 18's per box .	4 0—6 0
Gladiolus—	
—Giant varieties, scarlet, per doz. spikes ...	2 6—3 0
Gloriosa, per doz. blooms ...	5 0—6 0
Heather, white, per doz. bun.	6 0—9 0
—pink, per doz. bun.... ...	6 0—8 0
Honesty, per doz. bun.... ...	15 0-18 0
Lapageria, white, per doz. blooms	2 6—3 6
Lilium auratum, per doz. blooms ...	9 0-10 0
—longiflorum long, per doz.	3 0—3 6
Lilium speciosum rubrum, long, per doz. blooms ...	3 6—4 0
— short, doz. blooms ...	2 0—2 6
—lancifolium album, per doz. blooms, long	3 6—4 0
Lily-of-the-Valley, per doz. bun.	18 0-30 0
Michaelmas Daisies, per doz. bun. ...	3 0—6 0
Orchids, per doz.	
—Cattleyas ...	36 0-42 0
—Cypripediums per doz. blooms ...	6 0—8 0
Physalis (Cape Gooseberry,) per doz. bun.	15 0-18 0
Richardias (Arums), per doz. blooms	5 0—6 0
Roses, per doz. blooms—	
—Madame Abel Chatenay ...	2 0—3 0
—Molly Sharman Crawford	1 6—3 0
—Richmond ...	2 6—3 0
—Golden Ophelia	2 0—3 0
—Sunburst ...	2 6—3 0
—Mrs. Aaron Ward ...	1 6—2 0
—Madame Butterfly	2 0—3 6
Scabiosa caucasica, per doz. bun.	5 0—6 0
Smilax, per doz. trails ...	3 0—4 0
Statice sinuata, per doz. bun.	6 0—9 0
Stephanotis, per 72 pips ...	3 6—4 0
Stock, double white, per doz. bun. ...	6 0—8 0
Violets... ...	2 6—3 6

Remarks.—Except for a small quantity of blue Statice sinuata, Honesty and Physalis, there is not much to be recommended amongst the outdoor blooms just now. Chrysanthemums are arriving in fairly large quantities but they are mostly of very inferior quality. Amongst indoor Chrysanthemums there is still a shortage of good disbudded blooms; indoor bunch Chrysanthemums are a trifle firmer in price. Carnations, although more plentiful than a week ago, are mostly very inferior in quality and prices for good blooms rose to 6/- per dozen to-day. A return of milder weather has resulted in a larger supply of all Roses, and the prices of these flowers have been easier this week. Lilium longiflorum has been gradually cheapening in price since Saturday last, and the supplies to-day are more than sufficient for requirements, but the quantities of L. speciosum album and L. s. rubrum are much shorter. Gardenias are arriving in fairly large quantities and are of excellent quality. A few Tuberoses are the latest subject in this department. The warm weather is very unfavourable to the sale of Violets and the contents of many boxes are practically useless when marketed.

Fruit: Average Wholesale Prices.

	s. d. s. d.
Apples, English—	
—Worcester Pearmain, cases... ...	20 0-25 0
½-sieve ...	4 0—8 0
—James Grieve, ½-sieve ...	4 0--7 6
—Lord Derby per bushel ...	6 0-11 0
—Bramley ...	6 0-14 0
—Lane's Prince Albert, bush.	6 0-12 0
—Warner's King	6 0-12 0
—Tyrolean ...	8 0-14 0
—Californian Newtown Pippins	14 0-16 0
—Jonathan ...	18 0-20 0
—American Cox's Orange Pippin, per case ...	18 0 20 0
Apples, Italian, per box ...	7 0-10 0
Bananas ...	11 0-22 6
Blackberries, lb.	0 2½-0 3½
Cob nuts, per lb.	0 4½-0 5½
Figs, forced, per doz.... ...	2 0—8 0
—French, per box	0 9—1 3
—Italian, per box	0 9—1 3
Grape Fruit—	
—Blue Goose ...	— 50 0
—Cape: per case	25 0-30 0
—Isle of Pines...	25 0-30 0
Grapes, English Black Hamburgh, per lb	1 0--2 0
Grapes, Canon Hall	2 0--4 6
—Gros Colmar	1 3--2 6
—Alicante ...	1 0--2 0
—Muscat ...	2 0--6 0
Lemons, Messina, per case ...	14 0-20 0
—Naples ...	18 0-20 0
Melons—	
—Canteloup ...	2 0--5 0
—Others ...	1 6--4 6
Oranges—	
—Californian ...	20 0-25 0
Peaches, English, per doz. ...	12 0-36 0
Pears, English—	
—Conference, ½-sieve ...	4 0- 6 0
—Fertility ...	4 0- 6 0
—Comice ...	6 0-10 0
—Clapps's Favourite ...	4 0- 5 0
Pears—	
—Californian Comice—	
½-cases ...	10 0-12 0
cases ...	20 0-22 6
—French Beurré Hardy,	2 6--4 0
—Tyrol	6 0- 8 0
—ordinary ...	3 0--4 0
Pines	2 0--4 0
Plums, English—	
—Monarch ...	9 0-10 0
Prunes	6 0—8 0
—Californian ...	8 0-10 0

Vegetables: Average Wholesale Prices.

	s. d. s. d.
Beans—	
—Forced ...	1 0-2 0
—French. per lb.	— 0 6
—Runner, bush.	5 0—6 0
Beets, per cwt.	5 0--6 0
Cabbage, per doz.	2 0--3 0
Carrots, per ½ bag ...	4 0--4 6
Cauliflowers, per doz.	3 0--5 0
Cucumbers, per doz.	3 0--5 0
—Flats ...	12 0-17 6
Horseradish, per bundle ...	1 6--2 0
Lettuce, round, per doz. ...	1 6--2 6
Marrows, ...	2 0--7 0
Mushrooms	
—cups	3 6—4 6
—Broilers ...	2 6—3 0
—Field	1 0—1 6
Onions—	
Valencia ...	8 0-10 0
Parsnips, per cwt. ...	5 0--6 0
Potatos—	
—King Edward per cwt. ...	5 0--6 0
—others ...	4 0--4 6
Spinach, per bushel ...	3 6--4 0
Sprouts Brussel's per ½ bag ...	4 0—7 0
Tomatos—	
—English, pink new crop ...	4 6—6 0
—pink and white, new crop ...	4 6—5 0
—pink, old crop	2 0—3 0
—pink and white, old crop ...	2 0—3 0
—blue ...	1 6--2 6
—white ...	1 6--2 6
—Guernsey ...	2 0—2 6
—Jersey ...	2 0—2 6
—Dutch ...	1 6--2 0
Turnips, per cwt.	5 0--7 0

Remarks.—There has been a considerable falling off in the general demand during the past week, almost all departments reporting business as dull. Imported Apples are in heavier supply, mainly from the north American continent. A sprinkling of English Apples is still available and the demand is firm for good coloured fruits of Worcester Pearmain and large cooking varieties. Pears from mid-Europe are plentiful and some good Californian-grown fruits of Doyenné du Comice are available. Fair supplies of English Pears are being marketed, and some choice fruits of Doyenné du Comice from Jersey have sold well. Of Plums, there are some English Prunes and a few fruits of Monarch from cold store; the latter are not selling very freely against the competition of Switchen Plums from the continent. The Grape trade is receiving heavy consignments from Holland and Belgium and prices are comparatively low all round. Figs from France and Italy are plentiful and cheap. Trade in Tomatos is poor, a few fruits of the new crop are selling fairly well, but prices for Tomatos from Jersey and Guernsey have been low. At the time of writing there is a better feeling, and it is to be hoped that the improvement will last. Cucumbers have not been in good demand and better conditions are looked for. French Beans are selling better and forced Beans from Guernsey reached a good price level. The first Beans of the season from Madeira have been on the market this week. Mushrooms are a little more plentiful and their prices are easier. Nuts are scarce; Walnuts in particular are costly. Green vegetables are a slightly better trade. The Potato business is steady and quotations show little variation.

GLASGOW.

Acute depression characterised the trading in the cut flower market during the past week. The weather has favoured out-door Chrysanthemums, and as supplies far exceeded the purchasing power of retailers prices declined further. Good disbudded blooms of Dolores only made from 8d. to 10d. for 6's; Harvester and Betty Spark, 8d. to 1/-; while first consignments of Almirante were worth from 1/- to 1/3. Sprays ranged from 1d. to 3d. Other flowers were also cheap. Lilium longiflorum (Harrisii) averaged 2/- per bunch; Carnations made 1/- to 1/6 per dozen; red Roses, 1/- to 2/- per dozen; white, pink and yellow Roses, 2/- to 2/6; Smilax realised 1/- to 1/3 per bunch; Sweet Peas and Asters, 1d.; Gypsophila, 4d., and Asparagus, 6d. to 1/6, according to size.

Apples and Pears dominated the fruit market. Although American fruit is now arriving in larger quantities, prices continue on a high level. Jonathan, King David and Gravenstein sold at 19/- to 22/- per case, and York Imperial and King at 25/- to 40/- per barrel. English cooking Apples were scarce and gave a return of 14/- per keg. Eureka, Doyenné du Comice and Calabash Pears were worth from 14/- to 16/- per half-case. Beurré d'Anjou 10/- to 20/-, and English Pears, 3/- to 6/6 per sieve. Prices of Kippen Grapes averaged 3/9; Scotch Gros Colmar, 10d. to 1/-; Belgian Grapes, 1/-; and Spanish Grapes, 25/- to 40/- per barrel. Bronze Melons realised 9/- to 11/-; Pomegranates, 11/6; Lemons, 9/- to 13/-; and Blackberries, 9d. to 1/- per chip.

Lettuces were more remunerative to the grower than Cauliflowers, the former being worth 2/6 to 2/9 per dozen, and the latter, 1/- to 2/-. In consequence of the large consignments of Cauliflowers on Friday, salesmen freely accepted a penny each for them. Tomato supplies were also beyond consumption, and prices touched the lowest level of the season. At one time the fruit was purchasable at 2½d. per lb, but the average for the week would probably work out about 5d. French Beans were a good market at 4d. to 6d. per lb. Prices for Cucumbers kept steady at 3/- to 4/- per dozen.

TRADE NOTES.

The many people who hesitate to use cyanide for the destruction of wasps' nests will be glad to know of a non-poisonous method. Messrs. Corry and Co. supply a "safe and sure" cure, which is a liquid sold in bottles of various sizes, a small bottle being sufficient for two nests. Cotton-wool or similar material is soaked with the liquid and then pushed into the mouth of the nest; a few hours later the wasps will be dead and the nests may be dug out and burned.

Readers requiring information and advice respecting Patents, Trade Marks or Designs should apply to Messrs. Rayner and Co., Patent Agents, of 5, Chancery Lane, London, who will give free advice to readers mentioning *The Gardeners' Chronicle.*

GARDENING APPOINTMENTS.

Mr. H. Kingston, for the past three years gardener to J. S. Gibbons, Esq., Boddington Manor, near Cheltenham, as gardener to G. C. Dean, Esq., Sandal House, Warwick Road, Solihull, near Birmingham. (Thanks for 1/- for R.G.O.F. Box.—Eds.)

Mr. George Baston, for the past four years and ten months manager to Messrs. L. R. Russell, Ltd., at Syon Gardens, Brentford, as gardener to Lady Fitzgerald, Buckland, Faringdon, Berkshire. (Thanks for 2/6 for R.G.O.F. Box.—Eds.)

Mr. T. Elder, for fourteen years gardener to W. E. Tower, Esq., Old Place, Lindfield, Sussex, as gardener to Sir Rupert and Lady Clarke, at the same address. (Thanks for 2/- for R.G.O.F. Box.—Eds.)

Mr. W. J. Hood, for the past four years gardener at Chapel on Leader, Earlston, Berwickshire, as gardener to Mr. A. Cochran, at Abbots Hill, Galashiels, Selkirkshire.

CATALOGUES RECEIVED.

Charlesworth and Co., Haywards Heath.—Orchids.
Perry's Hardy Plant Farm, Enfield.—Empire-grown bulbs.
Army and Navy Co-operative Society, Ltd., Victoria Street, Westminster, S.W.1.—Bulbs.
Wm. Power and Co., 25, King Street, Waterford, Ireland.—Bulbs.

SCHEDULE RECEIVED.

Guildford and District Chrysanthemum Society.—Thirty-fourth annual exhibition, to be held in the Borough Hall, Guildford, on Wednesday and Thursday, November 3 and 4.—Secretary, Mr. W. Miles, Ashbrook, Cadogan Road, Surbiton.

THE

Gardeners' Chronicle

No. 2077.—SATURDAY, OCTOBER 16, 1926.

CONTENTS.

Alpine garden—
  Origanum hybridum 306
  Ourisia coccinea ... 306
  Potentilla formosa... 306
  Spigelia marilandica 306
Apples, the keeping of 301
Books, notices of—
  Fruit and its Cultivation 312
  Goldfish Culture for Amateurs ... 312
Copenhagen Municipal Gardens 311
Distribution of surplus bedding plants in the London Parks ... 303
Flower garden—
  The Bartley strain of Primula pulverulenta 309
Fruit crops, remarks on the condition of the 314
Fruit garden, the market 314
"Gardeners' Chronicle" seventy-five years ago 303
Garden notes from south-west Scotland 308
Hales, Mr. W.... ... 302
Hardy flower border—
  Poteriums 307
  The bushy perennial Lathryus... ... 307
Imperial Fruit Show... 302
Indoor plants—
  Dicentra spectabilis 306
  Jacarandra mimosaefolia 306
  Streptocarpuses ... 306
Iris garden—
  Dutch Irises ... 307
  Japanese Iris ... 307
  Regelio-Cyclus Irises 307
Iris Society 301
Michaelmas Daisies ... 315
National Gladiolus Society's show, 1927 303
Nursery notes—
  Mr. H. Hemsley, Crawley 312
Obituary—
  Cormick, Alex. ... 310
  Sanders, T. W. ... 319
Orchid notes and gleanings—
  Cattleya Cyrus ... 306
  Odontoglossums ... 306
Parks and gardens, public—
  Bermondsey open spaces 313
Plants, some experiences in acclimatising ... 310
R.H.S. Autumn Orchid show 301
R.H.S. new Hall ... 301
Rose garden—
  Planting new beds... 309
Salvia caerulea ... 302
Scotland, double cropping in 308
Societies—
  Haarlem Bulb Growers 319
  North of England Horticultural ... 318
  Royal Horticultural 316
Stanley Park, Blackpool, opening of ... 301
Sunlight and health ... 301
Tools, second-hand garden 311
Trees and shrubs—
  Buddleia variabilis 309
  Clematis grata ... 309
  Escallonia montevidensis 309
Vapourer moth hunt in Hyde Park 302
Vegetable garden—
  Mexican tree Spinach 315
Walker, Miss Winifred, gift to a London hospital 302
Water garden—
  Nesaea verticillata 307
Weeds, the eradication of garden 315
Week's work, the ... 304
Welsh garden, notes from a 308
Women land-workers and the Dairy Show 302

ILLUSTRATIONS.

Brasso-Laelio-Cattleya Elektron 303
Canna Ensign 305
Copenhagen Municipal Gardens, views in the, 310, 311, 313
Hales, Mr. Wm., portrait of 302
Iris Kaempferi at Ottawa Experimental Station, Canada 307
Primula pulverulenta, Bartley Strain 309

Average Mean Temperature for the ensuing week deduced from observations during the last fifty years at Greenwich, 48·8.

Actual Temperature—
The Gardeners' Chronicle Office, 5, Tavistock Street, Covent Garden, London, Wednesday, October 18, 10 a.m. Bar. 29·85. Temp. 63°. Weather, Sunny.

The Keeping of Apples.

Although, so far as this country and season are concerned, there are but few Apples to keep, the problem of the best and simplest means of storing Apples is always with us. On the present occasion we do not propose to restate the various methods which growers in this country employ with greater or less success, but to review the conclusions which have been reached by Mr. Kidd and his colleagues of the Low Temperature Research Station, Cambridge. These conclusions which—as needs scarcely be said—are by no means final, are contained in Appendix II to the *Third Report*: *Fruit*, of the Imperial Economic Committee in Marketing and Preparing for Market of Foodstuffs.[*] The most interesting conclusion to be drawn from Mr. Kidd's report is that the problem of storage of Apples is far more complex than has hitherto been supposed. Not only are there wide differences between the keeping qualities of different varieties of Apple; but the keeping quality of one and the same variety varies widely according to the soil in which it is grown. It is therefore evident that further research in this direction may enable growers, whose fruit keeps but poorly, so to modify their methods of cultivation as to secure fruit which keeps better. In like manner different varieties of Apple behave differently at a given low temperature. Some cannot be stored successfully at temperatures of 32° to 34° F. If the temperature be below the most suitable, internal breakdown often results. Another fact of great interest which has been confirmed by the researches at the Low Temperature Station is that composition of the air makes a considerable difference to the keeping quality of Apples. An atmosphere containing no oxygen is generally harmful, whereas one in which the proportion of oxygen is reduced and that of carbon-dioxide is increased, operates favourably on the keeping quality. It may be that it is due to this fact that the oiled paper wrappers not infrequently used for Apples owe their undoubted value in preserving the fruits. Fruit growers generally will learn with interest that none of the methods usually in vogue for keeping Apples can compare with cold storage or storage in artificial atmospheres of controlled composition. In this connection Mr. Kidd makes the suggestion, which we hope will be acted upon, that experimental storage stations should be established in fruit-growing districts and worked in conjunction with the Low Temperature Station. We believe that the Imperial Economic Committee has at its disposal large funds for investigations, and is at present engaged in considering schemes of research. If so, it would be desirable that this question be brought by the Horticultural Division of the Ministry of Agriculture before the Horticultural Advisory Committee at an early date with a view to propounding schemes of research. For it is pathetically true that the home producer needs all the help which the State can give him and, as a member of the Empire, deserves the assistance of the Imperial Economic Committee. How much he may need it is illustrated by the present position of one of his chief products—the Potato. A few weeks ago second-early Potatos were fetching 2s. 6d. to 3s. a hundredweight in the north of England markets, and growers who had perforce to sell their produce then had once again the mortification of disposing of their produce below the cost of production. The grower is continually being urged to produce more food, and only too often when he succeeds in doing so the market prices make his efforts vain. Committees which meet and pass judgment in this or that section of the trade organisations which operate between the grower and the consumer seem to ignore this aspect of the subject: how, when a bountiful season has given him something to sell, to enable the grower to recoup himself by a reasonable selling price against the inevitable loss which he must suffer when his harvests are scanty. This recurrent problem of the Potato crop deserves the consideration of those who admonish the home grower, and for our part although it might involve the shedding of shibboleths we believe that the problem is susceptible of solution. Keeping of Potatos is relatively easy, but economically risky, and hence salvation does not lie that way. We should like to see the work of the Imperial Economic Committee extended to include even more specifically than it has yet done the problems which confront the home producer. There is much scope for investigation in this direction and, as we think, such enquiry would be welcomed by all those engaged in the producing and marketing of vegetable produce.

Royal Horticultural Society's New Hall.—At 3 p.m. on Tuesday, October 19, the foundation stone of the Royal Horticultural Society's New Hall, Westminster, will be laid by Lord Lambourne, the President of the Society. Admission to this function is only by special ticket.

Sunlight and Health.—The fifteenth annual conference of the British Commercial Gas Association is to be held in Newcastle-upon-Tyne on Monday, Tuesday and Wednesday, October 25, 26 and 27, under the presidency of Mr. John E. Cowen, J.P. The conference will open with a reception by the Lord Mayor of Newcastle at which Dr. C. W. Saleeby will lecture on "Sunlight and Health." On the following days the various means of assisting the public to secure the best results from gas appliances will be discussed by experts.

Iris Society.—A meeting of this Society will be held at the Grosvenor Hotel, Victoria, S.W.1, on Thursday, November 4, and as several important matters will come up for discussion a good attendance is desired. The meeting will be preceded by a dinner (tickets 10/6 each), commencing at 7.15 p.m.

Competitive Classes for Stove and Greenhouse Plants at Chelsea Show, 1928.—In commemoration of the prospective inauguration of the New Hall in 1928, the Council of the Royal Horticultural Society has decided to offer a 100 guinea Challenge Cup for specialised groups, the subject of exhibition and allotted space of which will be varied from year to year. The competition will be open to amateur and trade exhibitors. The subject chosen for 1928 is "Stove and Greenhouse Plants," comprising a group space of 300 square feet. It is hoped that by giving this early notice amateur and trade exhibitors will make a special effort to stage comprehensive groups and the cultivation of these ornamental and interesting plants will be generally encouraged. The prizes offered will be first prize, 100 guineas Challenge Cup and £30; second prize, Large Silver Cup and £20; and third prize, Small Silver Cup and £10.

British Carnation Society.—This Society's annual dinner will be held at the Restaurant Frascati, Oxford Street, on Tuesday, November 16, 1926, at 6.15 p.m. Tickets 10/6 each. The thirty-second floral meeting will be held at the R.H.S. Hall, on March 29 and 30, 1927.

Opening of Stanley Park, Blackpool.—The new Stanley Park at Blackpool was opened by the Earl of Derby on the 2nd inst., when the Borough was *en fête*, for at the same time the new sea wall and promenade with a series of sunken gardens entailing a cost of nearly £300,000, were also opened. The park was designed and laid out by Messrs. T. H. Mawson and Sons, Lancaster, at a cost of £250,000. Parts of the park area have generously been presented to the Corporation by Alderman Sir John Bickerstaffe, Thomas Marcus Watson, Esq., and William Lawson, Esq.

R.H.S. Autumn Orchid Show.—The annual R.H.S. Orchid Show will be held in the Society's Hall at Vincent Square, Westminster, S.W.1, on October 19 and 20. The Baron Schröder Challenge Cup will be awarded for the best group of Orchids exhibited by an amateur; and there is no restriction as to the number of assistants or area. A Challenge Cup valued twenty guineas, presented to the Society by the Trade Orchid Growers for competition, will be awarded for the best group exhibited by an amateur who employs not more than three assistants in his Orchid houses (including the head gardener), for a group of Orchids not exceeding sixty square feet. A silver trophy valued seven-and-a-half guineas, is offered for the best twelve Orchids, not more than two of one genus, exhibited by an amateur who employs not more than two growers in his Orchid houses. A silver trophy, valued five guineas, is offered for the best six Orchids exhibited by an amateur who employs one Orchid grower. The Secretary of the R.H.S. will be pleased to receive entries for these competitions and to supply entry forms. Entries should not be received later than by the first post on Monday, October 18.

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[*] Printed by H.M. Stationery Office, 1926. Price 4s. 6d. net.

Imperial Fruit Show.—The Ministry of Agriculture will stage a special exhibit at the Imperial Fruit Show, to be held in Holland Park Hall, London, from October 29 to November 6, and the Royal Horticultural Society has arranged for a display of fruit, flowers and evergreens from their gardens at Wisley. The most prominent feature of the show will be the combined exhibit of the great fruit-growing dominions—Canada, Australia and South Africa—covering an area of over 3,000 square feet, under the auspices of the Empire Marketing Board. An interesting competition has been arranged for baked Apple dumplings (using Empire fruit only), the entries in which will be staged daily at the show. Splendid exhibits of fruit are being arranged by some of the greatest distributors in the United Kingdom. The show is open from 10 a.m. to 9.30 p.m. daily, and there will be music every afternoon and evening.

The Jones-Bateman Cup.—This cup was presented to the R.H.S. in 1920 by Miss L. Jones-Bateman of Cae Glas, Abergele, and is a valuable silver-gilt replica of the Warwick Vase. It has been decided to award the cup for the encouragement of fruit production. It is offered triennially for researches in the growing of hardy fruits, Figs, Grapes and Peaches in the open or under glass. Candidates should submit accounts of their work by October 31 of the appointed years. The work dealt with must have been carried out by the candidate in the United Kingdom mainly during the preceding five years. The cup will be held for three years by the successful candidate, who must give a bond for its safe return. The holder will be eligible to compete on the next or any succeeding occasion. When the cup is relinquished, the holder will receive a commemorative gold medal. Two assessors will be appointed by the Royal Horticultural Society and one by the Federation of British Growers, who shall report to the R.H.S. Council upon the originality and comparative potential value to the fruit-growing industry of the work of the candidates. The Council will award or withhold the cup at its discretion. Candidates' account of work must be submitted by October 31 this year, and the Council sincerely hope that there will be a response from those interested in fruit culture.

Kingston and Surbiton Chrysanthemum Society.—This Society's nineteenth annual show is fixed for Wednesday, November 3, at Surbiton Assembly Rooms. Valuable Silver Cups, N.C.S. Medals and cash prizes are offered; there are four classes open to all England and others open to residents within a ten mile radius of Kingston. Schedules may be obtained from W. H. Divers, V.M.H., Westdean, Hook, near Surbiton.

Women Land Workers and the Dairy Show.—At the forty-eighth annual show of the British Dairy Farmers' Association held at the Agricultural Hall, Islington, from October 19 to 22, one of the many exhibitors will be the Women's Farm and Garden Association (a voluntary body under the presidency of H.R.H. Princess Louise, Duchess of Argyll). This Society, founded in 1899, has headquarters in Baker Street, and is represented at the chief agricultural and horticultural shows, to give advice in regard to all outdoor work for women. The Association has a registry department for trained women farmers and gardeners, a members' club, a small holdings colony in Surrey, and a land outfit department.

Mr. William Hales, A.L.S.—For seven-and-twenty years Mr. W. Hales has been Superintendent of the ancient and famous Chelsea Physic Garden, but ere he became one of the successors of Phillip Miller he had undergone a sound practical training. In the days of long ago Phillip Miller sent Aiton from the Chelsea Physic Garden to take charge of Kew; in 1899, Kew sent William Hales to take charge of the Chelsea Physic Garden. Born at Leamington, Mr. Hales commenced his gardening career in the gardens of Dr. Hyde at Strathearn House, a local establishment of considerable horticultural repute. Two years later he obtained employment in the Ranelagh Nursery, Leamington, under Mr. E. Crump, an old Kewite, who so extolled the merits of Kew as a training ground for enthusiastic young men that he fired young Hales with a desire to enter the Royal Botanic Gardens. From Leamington Mr. Hales went to Edgbaston, to the gardens of Ralph Heaton, Esq., and while there he took full advantage of the opportunities afforded by the adjacent Birmingham Botanic Garden to widen his knowledge of plants, and eventually he obtained a position in this well-known establishment under that fine old gardener and guide Mr. W. B. Latham, who encouraged him to study at the Birmingham Technical School. Mr. Hales joined the Birmingham Gardeners' Mutual Improvement Society and competed so successfully for the prizes offered for essays on horticultural subjects that he won two first and one second prizes. On June 4, 1895, Mr. Hales came to Kew where he subsequently became sub-foreman under Mr. Garrett and gave an excellent account of himself in the courses of lectures given to the students. On October 2, 1899, he took up his duties as Superintendent of the Chelsea Physic Garden where for over a quarter of a century he has remained to carry on the great work and traditions of that fine old establishment. His ability has been recognised in various ways. He is an associate of the Linnean Society, a member of the R.H.S. Scientific Committee, first examiner in the practice of horticulture for the new B.Sc. Hort., London, an examiner for the Royal Horticultural Society, and chairman of the Kew Guild. All these honours have been thoroughly merited, and now Mr. Hales is to enjoy an experience that will fulfil a life-long desire to travel in the tropics. By the generosity of the Trustees of the Chelsea Physic Garden and as an appreciation of services rendered, Mr. Hales will leave England on December 3 and travel to Ceylon, where he hopes to arrive at Colombo on Christmas Day. While in Ceylon he will visit Kandy, Peradeniya, Nuwari Eliya and other important horticultural centres. From Ceylon he will journey to Penang, Ipoh, Kuala Lumpur and Singapore, passing thence to Java for the purpose of visiting Sourabaya, the extensive Botanical Gardens at Buitenzorg, Garvet and Djocka. From Java Mr. Hales will return to Singapore and take the boat for home, where he is due to arrive on March 26, 1927. All old Kewites, and his many associates in connection with his work at Chelsea, will join in congratulations to the Trustees for arranging this trip and in wishing Mr. Hales *bon voyage*.

MR. WILLIAM HALES, A.L.S.

Miss Winifred Walker's Gift to St. Bartholomew's Hospital.—The first lot offered at the auction sale in Bush House, Strand, on Tuesday last, of articles gifted in aid of St. Bartholomew's Hospital, was a beautiful water-colour painting of flowers by Miss Winifred Walker, which realised eighteen guineas. The painting was afterwards presented to the Lady Mayoress as a wedding gift, and Miss Pryke said she would treasure it as a souvenir of the effort they were all making on behalf of this great London Hospital. Miss W. Walker is well-known to many of our readers, and several of her floral paintings have been reproduced in the horticultural press and nurserymen's catalogues.

Vapourer Moth Hunt in Hyde Park.—With the acquiescence of the Office of Works, Mr. A. M. Hogarth of the College of Pestology, organised a hunt for the cocoons of the Vapourer Moth (Orgyia antiqua) among the trees of Hyde Park. The hunters were boy scouts and girl guides and the hunting ground the avenue from the Marble Arch to Hyde Park Corner. About two hundred boys and girls took part in the proceedings on Sunday afternoon last, and they acted with so much enthusiasm that their credit account of good deeds must have accumulated considerably. Lady Farren and her assistants counted the "bag," which totalled 4,500, and weighed seven-and-a-half pounds. On the assumption that a Vapourer Moth will lay from 250 to 300 eggs, this raid in Hyde Park has reduced the next generation of Vapourer Moth caterpillars by not fewer than 1,250,000.

Salvia caerulea.—On September 21, at the Royal Horticultural Society's Great Autumn Show, a Salvia exhibited by Miss Martineau under the name of Salvia Bluebeard received an Award of Merit (see p. 254), subject to its receiving a specific name. The plant has now been identified by Dr. D. O. Stapf as Salvia caerulea, Benth. From its native habitat the plant might be expected to be half-hardy, but it is understood that it survived last winter in the open both at Ascot and Maidenhead.

Open Spaces at Brighton.—It is encouraging to note in these days of rapid town-expansion, that during the present year committees have been set up in the south of Sussex, containing representative local men advised by experts, to consider how best to preserve the amenities of the South Downs. One of these committees includes representatives of local authorities from Brighton, Hove, Lewes, Newhaven, and a number of rural parishes; another has been formed by the Worthing municipality, in conjunction with Steyning and East Preston; while further west a third joint committee comprises Arundel, Littlehampton, and a portion of East Preston not covered by the Worthing Committee. One of the tasks before the Joint committees will be to recommend tracts of land lying between towns for purchase and reservation as open spaces. There is a quantity of low-lying ground, unsuitable for building, that should be acquired without delay; but, unfortunately, many of the most beautiful districts in the south of Sussex are at the present time unprotected, and are in the areas of rural district councils who still regard planning for the future as an unnecessary expense. It is to be hoped that these will eventually come into line, and that the example set by Brighton and the other coast towns will encourage all Sussex local authorities to join in effective action to protect the amenities of the Downs. Already the preliminary map of a regional town-planning scheme for the area extending from the River Adur on the west to approximately the River Ouse on the east, and northward to include the Borough of Lewes and the South Downs, has been approved by the committee concerned, and has been sent to the various constituent local authorities for their consideration. Brighton itself is well provided with public parks and gardens. There is a public golf-course, Hollingbury Park, covering 240 acres; Preston Park, containing over sixty-six acres, was purchased in 1883 for £50,000, and over £22,000 has been spent in laying it out; Queen's Park was presented to the town by the Trustees of the Brighton Race Stand in 1890; and the Tenantry Down, known as the Race Ground, on the South Downs, also belongs to the town. There are four other recreation grounds in the Borough, and the numerous squares open to the sun and the sea help to make it spacious and healthy.

Distribution of Surplus Bedding Plants in the London Parks.—The surplus bedding plants at the London County Council's parks and gardens will be distributed to the public between the hours of 9 a.m. and 11 a.m. to-day, Saturday, October 16. Persons desiring to participate in the distribution should make personal application to the officers-in-charge at the various parks or gardens. Plants will not be handed to children under the age of fourteen unless they present a note from their parents or teachers.

National Gladiolus Show, 1927.—The British Gladiolus Society will hold its 1927 exhibition in conjunction with the Taunton Show, at the kind invitation of the Taunton Horticultural Society.

Double Cropping in Scotland.—The first instance of cereals having been grown for milling purposes on land which had yielded a Potato crop earlier in the season is reported from South Ayrshire. On the farms of Craigiemains and Laggan, in the parish of Ballantrae, a crop of Oats has been raised after early Potatos, and the grain which has been cut is now ready for threshing. The straw is of good average length and the grain of fine uniform quality. Hitherto the farmers in the Carrick division of the county have been accustomed, after raising Epicures Potatos, to grow Rape for the feeding of sheep, or winter Cabbage and Kale, and the production of Oats is in great measure due to the exceptionally fine weather experienced this season.

Appointments for the Ensuing Week.—Monday, October 18: National Chrysanthemum Society's Floral and Executive Committees meet. Tuesday, October 19: Royal Horticultural Society's Committees meet (two days); National Sweet Pea Society's Annual Meeting, at Essex Hall, Strand; Winchester Gardeners' Association's meeting. Wednesday, October 20: Royal Gardeners' Orphan Fund meeting. Saturday, October 23: British Mycological Society's autumn foray for London students to Virginia Water.

"Gardeners' Chronicle" Seventy-five Years Ago.—*Messrs. Rollisson's Nursery, Tooting.*—Few nurseries contain a more extensive collection of plants than this does. It possesses a fine range of houses, three of which have been built expressly for Orchids. The first is span-roofed and of considerable length, with a table up the centre and one on either side. There are some hundreds of plants in this house, some of them being fine specimens; and there are several in bloom. Miltonia Clowesii is beautifully in flower. There are three varieties of this plant here; one of them, a fine kind, was imported a good while ago, but is only now flowering for the first time. Along with it was Miltonia spectabilis, the same plant which was at the Chiswick Flower Show on the 19th of July, and yet it has, at the present time, more than a hundred blooms on it. It is a very fine plant of the kind. In the same house was a variety of M. spectabilis, with purple flowers. It grows in the same way as spectabilis, and the blossoms are very large, often measuring three or four inches across, and of a fine rich colour. Associated with these were Huntleya Wailesiana, with white and purple flowers; Galeandra Baueri, a fine specimen of Sobralia macrantha, Peristeria elata (the Dove Plant), P. guttata, Brassia Lanceana, some Oncids, Cymbidium giganteum, and Lycaste Skinneri. At the end of this house was a fine collection of Pitcher Plants, all in excellent condition. The pots were plunged in sphagnum in gentle bottom heat. Among them were Nepenthes ampullacea, N. Rafflesiana, N. Hookeriana, and other fine sorts. After leaving this house, a few steps farther on led to another, which was filled chiefly with Cattleyas, Laelias and Odontoglossums, etc.; Laelia superbiens was making luxuriant growth. This is rather a difficult plant to manage; but all the extra care that it requires is amply compensated for by its charming spikes of purple blossoms. The magnificent plant of this Laelia, at Chiswick, when in bloom, is worth travelling miles to see. Odontoglossum grande, Cattleya violacea, C. Loddigesii, the beautiful Dendrobium chrysanthum, were all in flower here, together with several others. Contiguous to this is another span-roofed Orchid house of considerable length, containing on a raised platform at the end some fine specimens of Pitcher-plants, among them were Nepenthes albo-marginata, N. Rafflesiana, etc.; and on the left of these was a nice collection of variegated Orchids under bell glasses, while on the right was a tank for aquatics. The Orchids in this house were principally East Indian kinds. We remarked a fine stock of Vanda tricolor and suavis, which has lately been received from Java. There was also the beautiful Phalaenopsis grandiflora, the queen of all the Orchids. *Gard. Chron., October* 18, 1851.

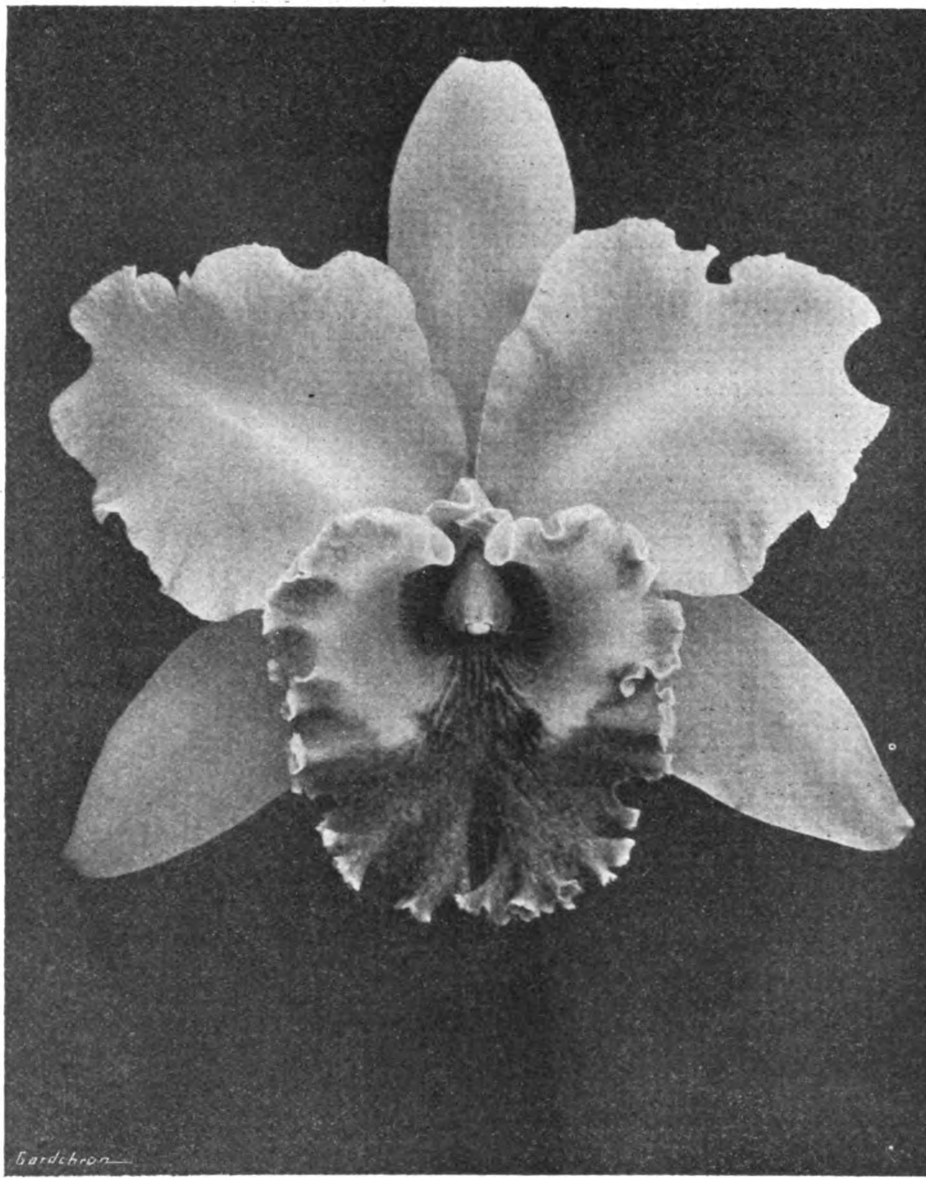

FIG. 140.—BRASSO-LAELIO-CATTLEYA ELEKTRON.

R.H.S. First-Class Certificate, October 5. Flowers soft yellow, gold and purple.

Shown by Baron Bruno Schröder (see p. 297).

Publications Received.—*Aims and Methods in the Study of Vegetation*, edited by A. G. Tansley and T. F. Chipp; Crown Agents for the Colonies, 4, Millbank, S.W.; price 12/6. *British Bark-Beetles*, by J. W. Munro; Forestry Commission Bulletin No. 8; His Majesty's Stationery Office, Adastral House, Kingsway, W.C.; price 2/6 net. *Executors and Administrators* or *How to Prove a Will*, by G. F. Emery, Effingham Wilson, 14, Copthall Avenue, E.C.2.; price 3/- net.—*A Book of Lettering*, arranged by Jean K. Robertson, drawn by Albert Field; A. and C. Black, Ltd., 4, Soho Square, W.1; price 1/6 net.

The Week's Work.

THE ORCHID HOUSES.

By J. Collier, Gardener to Sir Jeremiah Colman, Bart., Gatton Park, Reigate, Surrey.

Phalaenopsis.—Many Orchids that have been growing under moist conditions during the summer require drier surroundings from now onwards. Among these may be mentioned the various Phalaenopsis, for many of these plants have finished making their leaves, and during the shorter days of winter will require less water at their roots, also drier atmospheric conditions. After the roots have ceased to extend, and the tips have become sealed, the plants will only need water in sufficient quantities to prevent the leaves from shrivelling. During their season of growth the Sphagnum moss on the surface of the receptacles will have been kept green and in a growing condition. This should now be allowed to become quite dry between each application of moisture. Through the winter it is not advisable to dip the plants, but merely to sprinkle the surface moss and the sides of the receptacles occasionally, taking care not to allow water to remain in the centres of the plants or axils of the leaves. They should now be afforded more light and a buoyant atmosphere, but must not be subjected to cold draughts. Ventilation should be so arranged that the fresh air becomes somewhat warmed before coming in contact with the plants. They will be benefited by the leaves being sponged at intervals with tepid soapy water. Other pseudo-bulbless evergreen Orchids, such as Angraecums, Aerides and Saccolabiums that flower during the spring and early summer are finishing their season's growth and should be afforded very similar treatment to Phalaenopsis. Although these Orchids never really cease growing they require, in great measure, to be treated as plants that require a rest.

Thunias.—These Orchids are being kept comparatively dry at the roots but still retain their foliage. By being kept in a dry atmosphere and full sunlight they will be liable to attacks of red spider; as a preventive, lay the plants on the floor and well syringe the stems and the under-sides of the leaves with a strong solution of soft soap and warm water. After the leaves have fallen the plants should be placed in a dry, cool house and no water afforded them until growth recommences.

THE KITCHEN GARDEN.

By F. Streeter, Gardener to Lord Leconfield, Petworth Park, Petworth, Sussex.

The Frame Ground.—Endeavour to clean out at least half of the old beds in the frame ground each season and fill up with fresh leaves drawn from the lawns and pleasure grounds. By this means plenty of warm beds will be available without the aid of manure for producing early crops. It is advisable, whenever possible, to have the frames and lights made to a standard size so that they will fit wherever placed. The old beds thus removed will make excellent material for working into the garden as the different plots are trenched, especially in very heavy soils.

Soils, etc.—A good stack of loam, leaf-mould and road-scrapings should be made before the winter sets in, and some of last season's heap brought under cover for sifting and mixing ready for use during the late autumn and winter. A thorough examination should be made of all seed-boxes and new ones made to keep up a sufficient stock. Crocks should be washed and graded, in fact, everything possible done to help through the busy season when each day brings forth much labour in potting and pricking off seedlings and young plants.

Onions.—On wet days some of the staff may be employed in sorting and roping the main-crop Onions. Pick out the largest bulbs for present consumption and save the medium-sized ones for use later. Suspend them from the roof of the shed whenever possible to enable the air to circulate between them and to keep them dry and free from frost.

Cauliflowers.—Autumn-sown Cauliflowers are fit for pricking out into cold frames. Allow a distance of four inches each way and use rather poor soil to which has been added a plentiful supply of soot. Keep a hard bottom under the soil so that the plants will make sturdy growth. Water them well and admit air on every possible occasion, closing and covering the lights only in frosty weather; in fact, the lights are far better removed altogether when the temperature outside is above 35°.

FRUITS UNDER GLASS.

By T. Pateman, Gardener to Sir Charles Nall-Cain, Brocket Hall, Hertfordshire.

Peaches and Nectarines.—In establishments where space in the glasshouses is limited for the growing of Peaches and Nectarines, it would be wise, before replanting, to consider the best means of obtaining so long a succession of fruits as possible in a limited number of houses set apart for these fruits. The grower should plant varieties that will furnish a succession of fruits in the early house until such time as those grown under cooler conditions are ready for use. Varieties best suited to early forcing in their order of ripening are Cardinal, Lord Napier and Pineapple Nectarines; Duke of York, Hale's Early and Peregrine Peaches, while the cooler house should be planted with an early variety, such as River's Early or John Rivers, Hale's Early, Peregrine, Violette Hative, Dymond and Nectarine Peach. The last is probably one of the best late Peaches and is deserving of extended cultivation. The selection given is for small growers; there are several other good varieties, but the above include some of the most reliable and easily cultivated sorts.

The Cherry House.—Trees growing in borders that have failed to fruit successfully may need root-pruning. Should this be the case, the present is the most suitable time to carry out this work. The roots are still active, and if the operation is done expeditiously they will soon grow into the new compost. Cherries will succeed in soil recommended for all stone fruits, which should contain a good supply of lime. Except at the times of flowering and setting of the fruits very little fire-heat is necessary, and if resorted to it should be used with great care, only sufficient warmth being needed to obviate a stagnant atmosphere. Good crops of Cherries may be obtained without the aid of artificial warmth; this fact alone where cold houses are available, makes the Cherry worthy of extended cultivation, trained either on wires in front of the house or on walls, as cordons, which, in my opinion, is the best system of growing Cherries indoors. With cordons a long succession of fruits may be obtained by planting early and late varieties. The Cherry also succeeds in tubs or pots. Grown in this way the trees may be removed from the house immediately the fruits are gathered and the house employed for other subjects.

THE FLOWER GARDEN.

By F. C. Puddle, Gardener to Lord Aberconway, Bodnant, Taly-Cafn, North Wales.

Paeonies.—Paeonies are amongst the most valuable of border plants; their beautiful flowers make a gorgeous display during early summer, and the foliage, which is charmingly tinted in early spring, remains attractive until late autumn. The plants should not be disturbed unnecessarily, but any replanting which may be desirable should be done in the early autumn, if possible. Liberal cultivation is essential, therefore the ground should be well trenched and manured before planting. Large clumps of the herbaceous section may be divided, but care is necessary to prevent injury to the crowns and the fleshy roots. The Moutan or Tree Paeonies do not succeed in every district but where they flourish they are amongst the most cherished plants in the garden; a sheltered position with a west aspect is the most suitable place to choose for them, and when they become established they are better left undisturbed. Tree Paeonies are usually grafted on stocks of the herbaceous species and it is advisable to examine the plants periodically and remove any suckers, for if they are allowed to develop they will quickly overwhelm the grafted portion of the plants. In addition to the garden forms of Paeonia Moutan, and P. officinalis, there are several species which are worthy of a place in every garden. Of these, the chaste P. obovata, the yellow P. lutea, the charming salmon-cerise P. lobata, and the crimson P. tenuifolia are amongst the most delicately beautiful of all Paeonies; other desirable species include P. anomala, P. Wittmanniana, P. Mlokosewitchii and P. Delavayi.

Carnations and Pinks.—Well-rooted young plants which have been raised by means of cuttings or layers should now be planted in their permanent positions so that they become established before bad weather sets in. On light and well-drained soils no difficulty will be experienced in wintering border Carnations on the flat, but if the soil is inclined to be heavy and moisture-holding it will be found an advantage to raise the beds above the level of the surrounding soil and lighten the staple by the addition of mortar rubble and coarse sand; sea sand is an excellent medium for Carnations. A reserve of plants should be potted and wintered in frames in readiness for filling vacancies in the spring. Weak-rooted layers should be treated similarly, but if frame accommodation is limited these may be left on the parent plants until early spring. Established plants of Dianthus Allwoodii and Perpetual Border Carnations should now have all long growths and flower spikes cut moderately hard back to ensure shapely specimens for next season's flowering.

Spring Bedding.—The recent cold weather will doubtless induce gardeners to hasten the dismantling of the summer bedding and the housing of tender plants. So soon as the beds are cleared they should be prepared for the reception of spring bedding plants, and these should be planted without delay, for it is very important to the success of spring-flowering plants that they are established in their flowering positions before winter sets in. Wallflowers, Polyanthuses, Violas, Pansies, Myosotis, Aubrietias, Alyssums and Arabis offer a good choice of material for very effective colour schemes, and suitable varieties of Tulips and Hyacinths may be associated with them to form contrasts in or harmonious blending of colours.

HARDY FRUIT GARDEN.

By W. Auton, Gardener to Viscount Elveden, Pyrford Court, Woking, Surrey.

Pears.—The Pear crop generally has been much better than the Apple crop, but the average quality of the fruit is not so good as it is in some seasons. Premature dropping has been very prevalent in the case of many varieties, and the available useful crop has been considerably reduced in consequence, while losses through early decay are unusually high. Amongst varieties which have borne good crops may be mentioned: Williams's Bon Chrétien, Souvenir du Congrés, Conseilleur de la Cour, Emile d' Heyst, Marguerite Marillat, Beurré Boussoch, Beurré Diel, Fondante d'Automne, Doyenné du Comice, Durondeau, Pitmaston Duchess and Josephine de Malines, while varieties which have borne meagre crops are Clapp's Favourite, Conference, Beurré Bosc, Beurré Hardy, Louise Bonne of Jersey, Marie Louise and Winter Nelis. Of culinary varieties Verulum and Vicar of Winkfield are bearing heavy crops, but Catillac has only a slight sprinkling of fruits. It is interesting to note the behaviour of varieties in different localities in various seasons, and where space is available it is obvious that the planting of a goodly number of varieties is an assurance against total failure of crop.

PLANTS UNDER GLASS.

By John Coutts, Assistant Curator, Royal Botanic Gardens, Kew.

Campanula pyramidalis.—Plants for flowering next year should be ready for shifting into six-inch or seven-inch pots; they may then be stood in cold frames where they can have the protection of the lights during severe weather or prolonged periods of rain. If frames are not available, the pots should be plunged to their rims in ashes, at the foot of a warm wall; they will winter perfectly in such a position.

Campanula persicifolia.—There are many beautiful varieties of the Peach-leaved Campanula, including Telham Beauty, and they are excellent for pot cultivation. Where the plants have been grown in the reserve garden for this purpose, they should now be lifted and placed in six-inch or seven-inch pots, according to the size of the clumps. They should be wintered in the same way as C. pyramidalis; brought on in a cool house, they may easily be had in flower before the plants in the open.

Acalyphas.—The brightly-coloured foliage of these plants is very ornamental. The plants are usually propagated in the spring, but it is a good plan to root young stock at this time, as it saves wintering old plants for stock purposes and plants rooted now make a useful early batch for next season. Moreover, if cuttings from these autumn-raised plants are rooted next spring they will give quicker and better results than cuttings taken from old plants that have been kept over the winter. The foregoing remarks apply also to a great variety of soft stove plants, and according to requirements a stock of young plants should be propagated at this time. The best Acalyphas for general purposes are A. macrophylla, A. macrostachya and A. Wilkesiana var. marginata; all these have handsomely-coloured foliage, while the green-leaved A. hispida is grown for its long, catkin-like inflorescences, which last in beauty for a long time. This species is very effective when grown in standard form, and young plants with stems three to four feet in height should not be discarded, for if they are kept and their tips pinched out they will make fine standards for next year.

Cannas.—Plants that have done duty in the conservatory and have been stood out-of-doors, in a sunny position should now be stored for the winter. They may be turned out of their pots, keeping the ball of soil intact, as they winter best this way, and are not likely to suffer from over drying, which is the cause of the rhizomes failing to start freely the following season. They keep best in a frost-free building with a floor which retains a certain amount of moisture.

Anchusa italica var. Dropmore and Pride of Dover.—These Anchusas are excellent subjects for the conservatory or the unheated greenhouse; for this purpose strong plants should be lifted at the present time and placed in suitable sized pots, standing them outdoors at the foot of a wall until they are required. They may easily be brought into flower several weeks before they would flower in the open, and they are very useful, as they remain in flower for a long time and good blue flowers are always valued for decorative work.

FOR NORTHERN GARDENERS.

By A. T. Harrison, Gardener to the Marquis of Ailsa Culzean Castle Maybole Ayrshire.

Propagating Shrubs.—The present is a most suitable time for putting in cuttings of many kinds of evergreen shrubs, as well as most of the deciduous ones, and where difficulties have been met in rooting some of the finer kinds under glass, I would recommend a trial of the open border, as after many failures in pots and boxes, with such plants as Olearia macrodonta, O. Forsteri, etc., I succeeded in rooting quite a fair percentage of cuttings during the autumn of 1925 in the open border. Make a small trench about six or seven inches deep, and scatter a few spadefuls of sand along the bottom, then, after preparing the cuttings in the usual way, insert them along the straight edge, about six inches apart, making sure that each cutting is resting firmly on the sanded bottom. Press the sand and soil around them carefully by hand, and then tread the soil firmly, finishing off with the rake before repeating with the next row of cuttings. Should frost occur, and the soil around the cuttings become loosened by its action, so soon as a thaw comes they should be made firm again by treading each side of the rows, and this should be done at intervals as found necessary all through the winter.

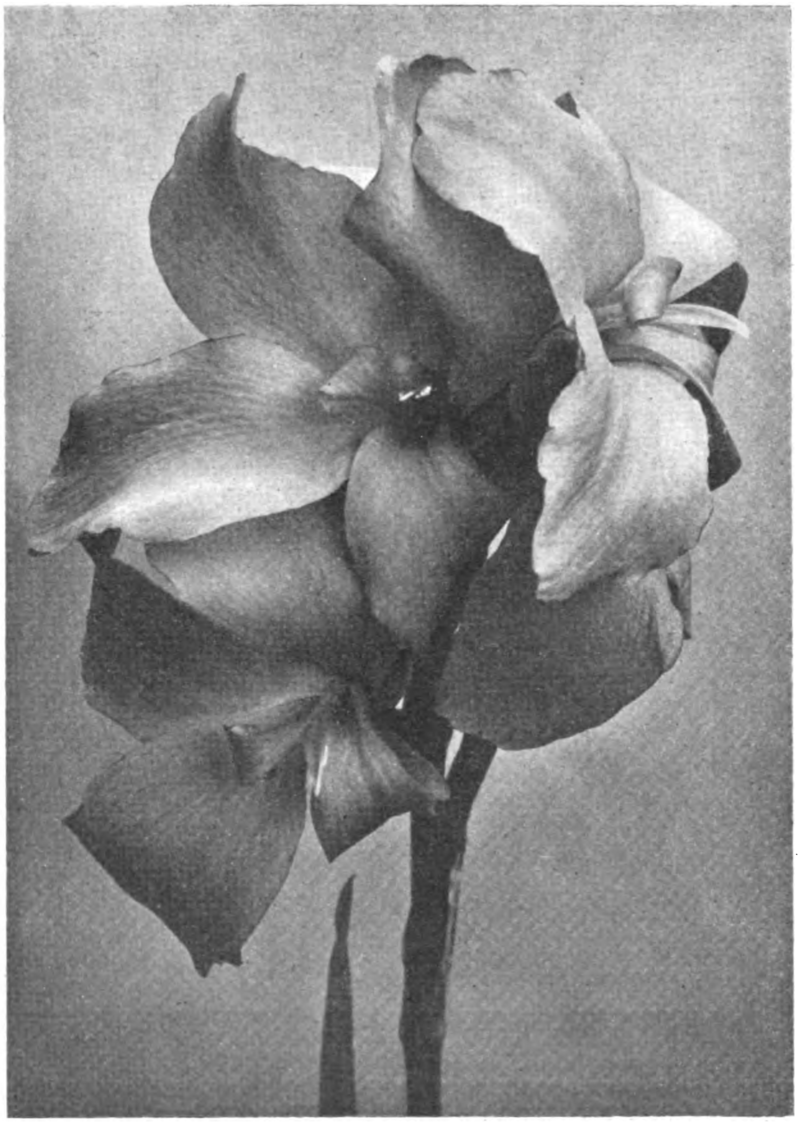

FIG. 141.—CANNA ENSIGN.

R.H.S. Award of Merit, October 5. Flowers deep scarlet. Shown by the Hon. Vicary Gibbs.

(see p. 297.)

Potting Fruit Trees.—Fruit trees in pots should now be attended to and, if necessary, repotted, but as often happens there comes a time when it is no longer possible to move them into larger pots, even if that were advisable, and the existing ball of soil and roots must be carefully reduced in size until it is small enough to allow at least an inch of new soil between it and the pot it is to occupy. The soil should be of the finest fibrous turf broken by hand, and a fair quantity of bone-meal and basic slag thoroughly intermixed with it, say a six-inch potful of each to every barrowful of soil. After making sure that the drainage is in perfect working order, the compost should be firmly rammed down between the ball of roots and the pot, finishing with a surface top-dressing and making all as firm as possible When the trees have been treated thus they should be left out-of-doors for some time in order that the wood may become ripened thoroughly; should there be danger of severe frosts the pots should be plunged in some protective materials, such as ashes or leaves, and left plunged until the time for pruning arrives.

Regal Pelargoniums.—Old plants of these Pelargoniums which have been rested and cut back are breaking into new growth and should be repotted at an early date. If the pots they are occupying are as large as may be necessary or convenient, the balls of the plants should be reduced carefully until some of the new compost can be worked around them in the same manner described for repotting fruit trees. Younger plants, however, may be potted on into larger receptacles as their root-systems and general vigour denotes, but as a general rule pots two inches wider than those they occupied previously will suffice. Cuttings inserted some time ago are now rooted, and these should be placed separately in three-inch pots for the winter. After becoming established all Regal Pelargoniums should be kept in a cool house from which frost may be excluded, and not grown in a high temperature during the short days.

ORCHID NOTES AND GLEANINGS.

CATTLEYA CYRUS.

THIS new production of Messrs. Sanders, St. Albans, raised between C. Thurgoodiana (Luddemanniana × Hardyana) and C. Cybele (Gaskelliana × Luddemanniana) well sustains the reputation of C. Luddemanniana as a parent, the noble flower sent being large, well-formed, with broad and well-displayed petals and richly-coloured lip.

The sepals and petals and the exterior base of the lip are silver-white, tinged with rosy-mauve. The broad front lobe of the lip, which is crimped and slightly fringed, is rich ruby-purple, the colour extending in broad lines to the base. On each side of the tube of the lip are chrome-yellow blotches with fine gold lines connecting them and running to the base. *J. O'B.*

ODONTOGLOSSUMS.

ODONTOGLOSSUMS are universal favourites among cool Orchids owing to their very handsome flowers, which are obtainable through out the year from the different species and hybrids.

The comparative ease with which they can be successfully cultivated; the moderate size of the plants, and the great variety which can be accommodated in a small house combine to render them amongst the most popular of all Orchids. The elegant arching or pendulous racemes of flowers are adapted to all forms of floral decoration, either in a cut state or upon the plants. The species include some well-defined types, many of which have been used as parents in raising hybrids, several of which excel the species in size, shape and colour of the flowers, Odontoglossum species may be divided into two sections: those which require slightly warmer conditions being placed in one section, and the other comprising those that require cool conditions at all times.

The first section includes O. bictoniense, O. cordatum, O. coronarium, O. Harryanum, O. grande, O. hastilabium, O. Insleayi, O. Krameri. O. Londesboroughianum, O. Oerstedii, O. ramosissimum, O. Schlieperianum, O. Uro-Skinneri, and O. Williamsianum. These are best grown at the warmer end of the house, whilst the other section includes such well-known Orchids as O. crispum, O. Pescatorei, with the other species from Colombia; also the many hybrids of garden origin.

Where Odontoglossums are grown purely for furnishing cut flowers, the hybrids are specially suitable, the greater portion being good growers, with a strong constitution, and producing strong spikes of bloom in varied colours.

Owing to the species being found at different altitudes, some slight difference in treatment as regards rest, watering and other small matters is required, but a close observer will soon know each plant's requirements. As they grow wild in the mountain chains of the Andes of tropical America, in an atmosphere heavily charged with moisture at all seasons, a dry, arid atmosphere is detrimental to their well-being. They also delight in a supply of fresh air at all times, and there is no doubt but that the attacks of thrip and other insect pests are largely due to faulty conditions, or impure atmosphere in the house.

The grower should give strict attention to details, such as temperature, moisture, air and light; although the plants are not capable of withstanding strong sunshine, they still require an abundance of light, hence the necessity of keeping the glass clean, especially in gardens near large cities and smoky districts. Pots are the best receptacles for the greater portion, whilst shallow pans should be used for the small growers, such as O. Rossii. Pure peat fibre of a soft nature, mixed with live Sphagnum-moss, furnishes the best compost, and it is manifest from a consideration of the conditions under which they grow in their native habitat that the amount of compost placed around their roots should be strictly limited. Over-potting cannot be too strongly cautioned against, and the material should only be made moderately firm.

The plants may be repotted at any season of the year when the young growths are making new roots.

Repotting should be done annually, a sour compost caused by constant watering being inimical to the development of the roots. *J. T. B.*

INDOOR PLANTS.

STREPTOCARPUSES.

THE improved strains of Streptocarpus are very beautiful and as the cultivation of the plants is not difficult, they fully merit their popularity.

Plants raised from seeds sown in early spring will flower during the autumn and continue to do so for a considerable time. Formerly Streptocarpuses were treated much the same as Gloxinias, but they may be grown under cooler conditions than are generally afforded these latter plants.

The greenhouse Streptocarpuses are perennial but best treated as annuals and will succeed under the same treatment as tuberous-rooted Begonias, only the Streptocarpus requires shade during bright sunshine: the plants may be grown in shaded positions which are unsuited to many other indoor flowering subjects.

Good drainage is essential, for stagnant water at the roots and water applied to the crowns of the plants is harmful.

If desired, good varieties may be increased by means of leaf-cuttings which root freely in light, sandy soil or in cocoa-nut fibre in a propagating frame Many of the varieties come true from seed. Good fibrous loam, to which is added decayed manure from a hot-bed, with sufficient coarse silver sand to render the compost open, is a suitable medium in which to grow Streptocarpuses. Five-inch pots are suitable for the final shift.

Several plants may be accommodated in a pan, and when grown in these receptacles they are often very serviceable as decorative subjects for rooms. The Begonia mite sometimes proves a pest. Frequent applications of nicotine insecticide followed by spraying with tepid rain water to which a little soft soap and sulphur are added has been found effectual in checking this pest. *C. Ruse.*

DICENTRA SPECTABILIS.

THIS plant has elegant foliage and attractive flowers and is a favourite for conservatory decoration early in the year. Good-sized roots should be placed in fairly large pots. This plant will not withstand early or hard forcing. *J. Coutts.*

JACARANDRA MIMOSAEFOLIA.

ALTHOUGH the flowers of this one-time popular plant are by no means insignificant, it was and is often grown for its foliage, which, Acacia-like and extremely elegant, renders the plant of considerable value as a decorative, subject, and more especially for exhibition grouping, or, as in former days, for the decoration of the warm house.

The flowers are blue, in large, terminal and somewhat erect panicles, and are usually produced in the early summer: the leaves are long, bipinnate, with numerous pairs of opposite pinnae, each pinna bearing many pairs of downy leaflets.

The plant grows to a height of from six to even ten feet; it was introduced from Brazil in 1818, and has been referred to J. ovalifolia. The species under notice thrives in a mixture of peat and loam rendered porous and light by the addition of plenty of silver sand; propagation is effected by cuttings inserted in the early summer. *Ralph E. Arnold.*

ALPINE GARDEN.

OURISIA COCCINEA.

CONDITIONS are not always exactly suitable for this brilliant plant, but the preparation of a little patch of compost of a totally different character to the surroundings is very often worse than futile, and it is largely because plants have refused to flourish in a prepared bed the size of a pie dish that Ourisia coccinea and many another first-class plant has earned the reputation of being tender, miffy, or difficult to grow.

For brevity's sake in lists of plants, not only in catalogues but in books, signs and letters are used to indicate that a plant likes shade and moisture, and in consequence many such plants are condemned to dark corners where moss and fungous growths point to stagnation and rank sourness. Ourisia coccinea under such conditions will lead an unhappy but short life; yet it is true it thrives better in shade than in full sunshine, and that it must have plenty of moisture.

An ideal position may be found where water comes splashing down a deep gulley in a rock garden with shelving ledges of porous rock on either side of the water course. If the spaces between the rocks are filled with fibrous soil and broken rubble so porous that the splashing water filters as through a moraine, Ourisia coccinea will find a home to its absolute content, and it will spread itself rapidly, producing its vividly scarlet flower heads in abundance from May till September. In the case of a good-sized mass the greatest quantity of bloom will be congregated where the morning or evening sun reaches it, but where the jutting rocks afford shade during the middle of the day.

There is justification for creating such positions for such a plant, because its gorgeous display of colour amply repays the effort, but to dig a hole and put fresh soil into it as though one were potting a plant in the earth will usually prove a dismal failure. *A. J. Macself.*

POTENTILLA FORMOSA.

THIS is one of the most valuable and decorative species, with all the good qualities looked for in a border or rockery plant. It has handsome foliage and commences to flower quite early in the summer, continuing in bloom until the autumn in unbroken succession.

The bright cherry-red flowers, with carmine centres, are always attractive. Planting should be done in autumn and spring. Almost any good ordinary soil is suitable, but the situation should be a sunny one. *W. L.*

SPIGELIA MARILANDICA.

AT the time of writing, this uncommon North American plant is opening its brilliant, upright flowers in the greatest profusion. It forms a dense tuft of green foliage on erect stems, from twelve inches to fifteen inches high, each stem bearing terminal flowers which are long and tubular, of a brilliant crimson-red, with greenish-yellow throat. Each inflorescence bears from three to eight buds and flowers. This plant succeeds best in a partially shaded, moist situation, and in a deep, rich, fibrous loam, mixed with decayed leaf-mould, peat and coarse sand. Being a native of the woodlands of North America it is important to plant this Spigelia in shady nooks on the rockery where the roots will enjoy an abundance of moisture during hot summers. The plant is well adapted for planting in juxtaposition with the delightful Dodecatheons, Cypripediums and the like. *J.*

ORIGANUM HYBRIDUM.

ONE seldom meets with the pretty little Origanum hybridum which I have found the hardiest of the smaller Marjorums among the plants which have been introduced. The plant has withstood many winters with me on the lower terrace of a sunny rockery in light, well-drained soil. It is supposed to have a preference for peat, but this is not more than a preference, if even that, as it thrives quite well in sandy loam. Although not a showy plant, it is remarkably pretty in the form of its inflorescence and its colouring. *S. Arnott.*

HARDY FLOWER BORDER.

THE BUSHY PERENNIAL LATHYRUS.

In practically all old hardy plant catalogues and in a considerable proportion of modern ones may be found a list of several varieties under the heading Orobus. In some botanical works the genus is relegated to Vicia (Veitch), but in more up-to-date books, including the Kew *Hand Lists*, Orobus is referred to Lathyrus. It is no part of my purpose to quarrel with the authorities on nomenclature, but I most heartily wish the said authorities could by some means bring order out of chaos and secure a reasonable measure of uniformity in trade catalogues, for it is my opinion that we have in this tribe of very useful and pleasing border plants several which would be largely grown and appreciated at their true value were it not for the fact that the Orobus lathyroides of one is the Vicia oroboides of another, and the Lathyrus vernus of still another.

In this year's lists I find Orobus varius, which in other lists is given as Lathyrus pannonicus, but why Lathyrus albus is given as a synonym for this same plant, which has strikingly beautiful, bright reddish-salmon and yellow blossoms I am at a loss to understand.

From this it will be seen that in order to ensure getting the plant really desired it will be advisable to mention its colour as well as its name, and perhaps a few of its synonyms when asking a nurseryman to supply plants.

Perhaps of the whole group Lathyrus pannonicus is the gayest and most desirable. It grows, according to soil and situation, between one foot and two feet high, the latter height being sometimes reached by plants growing in somewhat enclosed and shaded gardens of old, humid soil. Even thus it is a more ornamental plant than many commonly recommended for such positions, but it is when growing in gritty loam in an open, sunny position that the plant contents itself with making a neat, symmetrical bush twelve to fifteen inches high, and bears highly-coloured flowers in the greatest profusion. These are not very large but they are delightfully gay, and the combination of the red-salmon with the clear yellow makes them exceptionally attractive even among bicoloured flowers.

In southern gardens the plant will begin to bloom before May is out, and continue to do so through June and July; in the northern counties it begins to flower in June and lasts until August.

Lathyrus luteus aureus is another desirable variety of elegant growth, the nicely-balanced stems being clothed with glossy, cool-looking foliage. The flowers are of a rich orange, and under favourable conditions of moderately good soil and warm sunshine a plant will attain a height of two feet by as much in diameter. Lathyrus roseus pallidus—not to be confused with Lathyrus latifolius roseus, which is a variety of the climbing Everlasting Pea—is a lovely clear shade of pink, and grows no more than a foot high. There is a very fine white named Lathyrus Smithii, frequently catalogued as Orobus Smithii, and said to be a natural species; it is a very fine plant and should be of some service for intercrossing.

The list could be lengthened, but that would mean including rather dull purples and flat mallow-pinks, and some which develop much foliage but little bloom. The four described are plants of serviceable quality and uncommon beauty. They will grow almost anywhere except in quagmires, and require neither staking nor protection. *M. R.*

POTERIUMS.

I can endorse what your contributor *M.* states (p. 286) with regard to the Poteriums succeeding in an ordinary border, as they are wonderfully accommodating. P. canadense I had for years in a very dry border of poor soil, where it had been planted when received as, at the time, no other quarter was available. Although it did not reach the height of six feet it was upwards of five feet for most years, and always proved a most attractive subject, either in the border or for cutting. P. obtusum appears to like a little more moisture but can be cultivated in a good border of fertile loam without losing any of its beauty. *S. Arnott.*

WATER GARDEN.

NESAEA VERTICILLATA.

For the shallow margins of a pond, where something is required to contrast both with the flat-growing Water-Lilies and the reeds and rushes which crowd around and wear an air of untamed freedom, Nesaea verticillata may be chosen for planting. At first sight of a young plant one might pardonably ask, "Is it a Willow or a Willow Herb?" There is considerable resemblance in the branching growths and sharp-pointed foliage to some of the Salix tribe, and at the same time the Lysimachia and the Lythrum families both have species which are to the casual glance somewhat similar in form, but Nesaea verticillata is, on closer inspection, found to be totally distinct and different from any of these plants.

In its bushy habit, long, linear or narrowly lanceolate foliage and pleasing bark tints, it is as ornamental as many shrubs which have nothing in the way of flowers to boast of, yet Nesaea verticillata has large and gloriously beautiful flowers of a yellow as clear and clean as that of the old-fashioned Evening Primrose—and there are few yellows that merit this comparison.

The proportions of a well-developed specimen are four to five feet in height and nearly as much in diameter. The bark of the main branches becomes so soft that the slightest chafing will rub it off like wet blotting-paper. It is prudent, on this account, to be content to plant small specimens from pots, and to so arrange them that something of a protective character grows around the base. Choose a position where sun shines, but where the water never sinks away from its roots, and, once planted, leave the plant undisturbed. *J.*

IRIS GARDEN.

JAPANESE IRIS.

Japanese Irises are generally considered to need special conditions in order to grow well. This, however, has not been found to be the case at the Central Experimental Farm, Ottawa, Canada, where they flourish when grown in light, sandy loam without any artificial watering. The plants shown in the illustration (Fig. 142) were planted in October, 1922, and the photograph was taken on July 26, 1926. These plants get no protection in winter except from the snow, which, as a rule, is deep, and comes before very severe frost and stays until spring. *Isabella Preston, Specialist in Ornamental Horticulture, Ottawa.*

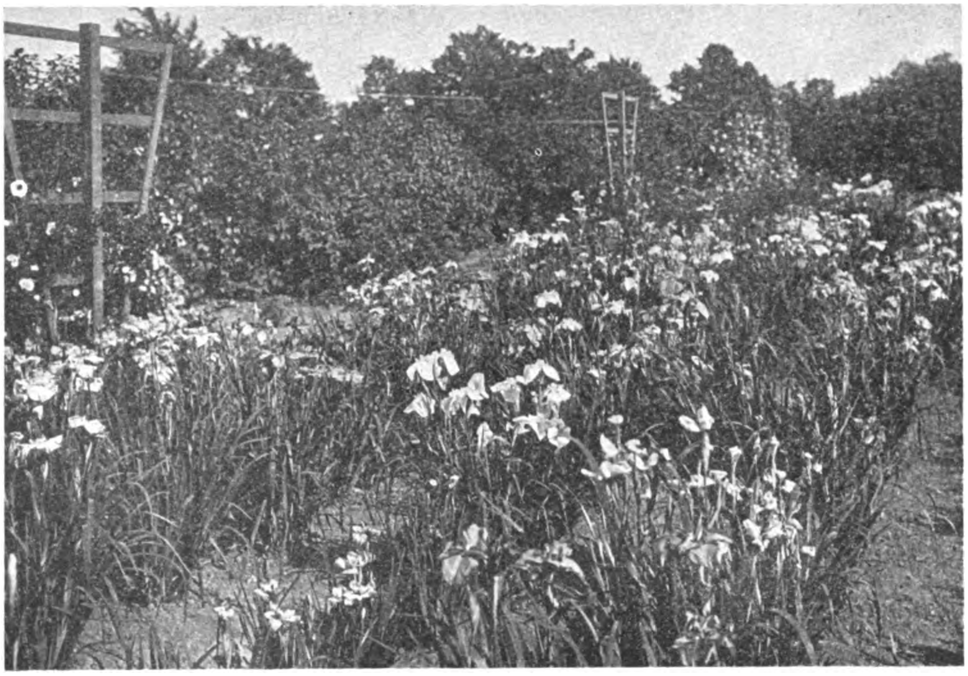

FIG. 142.—IRIS KAEMPFERI AT OTTAWA EXPERIMENTAL STATION, CANADA.

REGELIO-CYCLUS IRISES.

The beginning of October is the best time for planting Regelio-Cyclus Irises, and considering they are so easy to grow and reasonable in price it is remarkable that they are not grown more extensively than they are.

A bed of these Irises in bloom always attracts attention by reason of the quaint markings and colouring of the flowers. They may be bought in mixture cheaper than named varieties, but named sorts give most satisfaction.

Some sorts I have found do well are Aspasia, a wine-red shade; Psyche, whitish, the veins being brown and purple shades; Hera, red, blue and bronze markings; Mars, pale blue ground with darker veins; Hecate rosy lilac, with brown veins; and Charon, a bright shade of brown with chocolate coloured veins. *G. Kent.*

DUTCH IRISES.

The new bulbous Dutch Irises are the earliest of all the Xiphium type to flower, and are excellent subjects for forcing. They are of somewhat taller growth and more robust that the ordinary Spanish Iris, but their cultural treatment is very similar. These flowers have appeared at some of the early meetings of the Royal Horticultural Society and have been greatly admired. The time for planting is with us and I advise growers to try a few of these new and beautiful Irises. *T.*

NOTES FROM A WELSH GARDEN.

ALTHOUGH it came into bloom in July, Abelia grandiflora is still (early October) a mass of blossom, and it will doubtless continue, in spite of the inclement weather, until the first frosts. This is a singularly attractive shrub, quite apart from its free flowering propensity, the glossy, light green of the foliage, the red bark of the young wood and the rosy-fawn of the prominent sepals which remain for long after the corollas have fallen, making a most cheerful combination. Then the habit is very elegant and shapely and the shrub is useful because it is rather under the average size. A. Schumannii promises to be as floriferous as the above. It has a longer flowering season and the large blossoms are a very pleasing shade of pale bluish-mauve.

Clematis tangutica is a delightful plant for rambling over an old tree or rough bank, its glaucous-tinted foliage being exceedingly graceful. At the time of writing, this species is especially noteworthy, for not only is it still carrying a large number of its yellow, fragrant blooms, but the seed-heads in their early and latest stages are, respectively, like balls of spun gold and irridescent silk. This species will naturalise as freely as the wild Clematis in a favourable locality.

Euonymus nanus is the first of the Spindle Trees to ripen its fruit, the pink and orange pendants often adorning this little rock-garden bush by the middle of August. Next, as a rule, come the large and conspicuous fruits of E. latifolius, or one of its nearest allies, the orange-coated seeds bulging out of a rosy-red arillus as large as a good-sized Strawberry. The trailing E. obvatus, so useful as an undergrowth shrub, has strung its arching branches, which root as they proceed, with fruits much like those of our own Spindle Tree and these usually persist nearly all the winter. Compared with these and others, most of which develop brilliant leaf tints at this season, the corky-barked, E. alatus, is not so successful here, being slow of growth and unfruitful, but its leaf colour is good.

Pernettyas have berried extraordinarily well this season. Commencing very early to colour, the clusters which now crowd the wiry branches of these cheerful shrubs are very beautiful. They are among the few berries which one can always rely upon to last the winter through, many remaining until the shrubs are again in flower.

Gaultheria nummularioides is never more beautiful than it is from autumn onwards when, like the mosses of the rocks and roots among which it lives, it seems to assume a more telling green. A square yard or two of this delightful species in a partly-shaded woodland retreat always arrests attention, but I have to admit being disappointed with it in that it fails to fruit. The little pink-tipped, greenish flowers are produced abundantly on the undersides of the leaf-axils in the later summer, but never a fruit have I yet been able to find, and one wonders whether others have been more successful with this choice species.

Conspicuous at this season is the very silvery foliage of Eleagnus argentea. The leaves are always perhaps the most silvery in the garden, but, like others of the race, they reburnish their gleaming surfaces at the coming of autumn. Their time, however, is brief, for they are among the first leaves to fall. Variegated shrubs are not in great favour here, but another member of the Eleagnus family, E. pungens, with conspicuous golden variegations in the bronzy-green of its foliage, is a striking object just now. It alone is probably one of the most pleasing shrubs of the kind, but this particular specimen has growing through it and over it from the rear the crimson-fruited branches of Cotoneaster Dielsiana. With the leaves of the latter chequered with flecks of orange the combined effect is singularly good.

Near the water, but raised well above it in a sunny place, that most distinctive little Kniphofia, K. Nelsonii, is making a brave display in spite of the wintry weather. The soft, yet flaming scarlet of its many eighteen-inch torches, makes a vivid contrast with the dark-green of the grassy foliage. Other notable dwarf "Pokers" still in flower are K. rufa and K. Macowanii. Slugs are the great trouble here with all the Kniphofias, large and small, these pests cutting through the soft stems and ruining the bloom heads just as these are beginning to rise. Frequent dustings with powdered alum will defeat the enemy, but if this is overlooked, especially after rain, much damage is inflicted.

Pontederia cordata of which an excellent illustration was given in *The Gardeners' Chronicle*, pp. 243 and 249, has been flowering without cessation in the pool since before midsummer. The plant is still carrying a number of its azure-blue flower spikes, and these will doubtless continue until the first frost, which speedily disposes of all that is above water for the season. The leafage alone of this plant is decidedly ornamental.

Geranium Wallichianum var. E. C. Buxton, with its white-centred, clear-blue flowers, is at its best in autumn, and, unlike most of its race, it delights in semi-shade and a cool soil. The original seedling from which all the plants of this beautiful form have sprung, appeared among a number of the typical purple species which were growing against a north wall which only gets a little sun during the late afternoon in full summer. This old plant is still alive. Another Geranium which often blooms well in autumn is G. refractum. Cut back during the later summer this handsome species will produce a fresh crop of its downy, pale-green, prettily-lobed leaves and, before the end of September, will be carrying many sprays of its large, rose-pink blossoms. That very desirable Hawkweed, Urospermum Dalechampii, also can be relied upon to flower again in autumn notwithstanding its insatiable demands on sun and heat. The large, clear, citron-yellow flowers of this plant are decidedly showy and the colour is accentuated by the striking purple reverse of the outer rays. As the flowers are almost continuously opening and closing in response to the sun, this contrasting colour is always more or less in view.

The Fuchsias never fail to strike a cheerful and sympathetic note of colour in the autumn garden. In addition to F. globosa and F. Riccartonii, the various forms of the F. gracilis type, which are equally hardy here, are very welcome when flowers are getting fewer, the variety with purple leaves being worth a place for its foliage and habit alone. In the rock garden, F. pumila is perhaps the brightest in colour, F. Cottinghamii only excepted. The very small flowers of the latter are peculiarly vivid and glossy. F. recurva is another very charming little bush which is always full of blossom for months, its dainty, ruby-red flowers being prettily recurved. All these and others, even the last-mentioned, appear to be quite hardy and able to resist any amount of frost in a really free soil provided their roots have a covering of ashes. F. procumbens, which is now bearing both flowers and fruit does not get even that precaution. Few rock-garden plants excite the interest of visitors more deeply than this trailing Fuchsia whose upright, amber-coloured flowers are so deftly arrayed with chocolate and peacock-green. The foliage and habit are both delightful and the fruit, round and big as a fair-sized Gooseberry, ripens to a plum-red.

Kirengeshoma palmata is a highly ornamental plant which one does not often see. That it is hardy few can doubt, and it seems perfectly easy in a free, vegetable soil where there is part shade from the hottest sun. Here it has made a big clump, and to-day its olive-green, vine-like leaves are proving what a fine setting they afford the ivory-white flowers. The loose flights of these large blossoms, drooping at the tips of the ebony stems, are curiously appealing, and few flowers harmonise more sympathetically with the hues of autumn. That they do not open wide their broad, two-inch rays, retaining the shuttlecock shape all along, need not be the matter for regret that it is to some, since this feature affords the plant a distinction which is almost unique and by no means inartistic. *A. T. Johnson, Ro Wen, Conway, N. Wales.*

GARDEN NOTES FROM SOUTH-WEST SCOTLAND.

AMID the multitude of new species of Berberis introduced in recent years from China it would be a pity if some of the older species fell out of favour. Such seems to have happened in some measure to the Himalayan Berberis aristata, a deciduous shrub of much beauty, growing to a height of ten feet or so; the variety floribunda is even better than the type, the shining, almost spineless leaves, two to four inches long, grow in tufts along the branches, and below each tuft, protected by strong single or triple spines, hangs a drooping raceme of bright yellow flowers, three to four inches long.

The flowers are succeeded by egg-shaped or nearly spherical berries as big as a large marrow-fat Pea. These are bright red, but their colour is masked by a glaucous veil of bloom, and when the branches are loaded with them in mid-autumn the bush presents a very remarkable appearance.

To do this Barberry justice, it should be grown on a lawn or other open space where it can develop its fine proportions.

Salvia uliginosa, a Brazilian species, is a pretty plant at this season, carrying its branching spikes of Cambridge-blue flowers to a height of six feet. One may be puzzled to account for its specific name, "uliginosa," meaning a marsh lover. Here it attains its full stature in dry borders of sharp loam, such as its Mexican relative S. patens has inhabited undisturbed through at least thirty winters. I should be glad to receive information about another species which has come here under the name, possibly a misnomer, of Salvia Bethellii. It does not appear under that title in the *Kew Hand List* or any other work of reference at hand. It is beautiful both in foliage and flowers, the latter being carried in stout, crowded spikes of rich rose colour.

The Gentianella, Gentiana acaulis, always greets us with a few flowers in the waning days; but it is putting it to too severe a test to allow it to do so alongside the more brilliant G. sino-ornata. In spring we account the Gentianella to be of a matchless blue; but a stray plant has opened a flower beside a clump of the new comer and it must be owned that it suffers by contrast. Its blue seems almost dull beside the livelier hue of the other.

Lovers of Rhododendrons will do well to note the fine quality of R. cyclium, one of the Campylocarpum series. The flowers resemble those of R. Souliei, but appear a fortnight later, and differ in this important respect, that, whereas those of R. Souliei open pink and pale to white, those of R. cyclium retain their bright rose colour until they fade.

Cotoneaster frigida presents a gorgeous spectacle at present. Trees forty feet high are loaded with scarlet berries from their summit to where the boughs, weighed down by the load of fruits, sweep the ground. At present the, birds are well furnished with a variety of diet and leave the Cotoneaster alone; but the first frost will attract them to it—to some of the trees at least; for it is a notable fact that, while some of the trees are stripped before Christmas, others are left severely alone to carry their fruit till Eastertide.

All who have had the privilege of visiting in October the splendid collection of exotics at Logan, in Wigtownshire, must have been charmed with the beauty of Eupatorium Weinmannianum. A rounded evergreen bush, six feet high and eight feet across, it is shrouded at this season with a mist of fragrant white flowers tinged with pink. I have not succeeded, so far, in tracing its origin; the specific name seems to indicate Australia as its native country, in which case it may not be very hardy; but it is a choice subject for maritime districts. It is most easily propagated; cuttings which I was allowed to take from the Logan bush two years ago are now plants three feet high and covered with bloom. *Herbert Maxwell, Monreith.*

FLOWER GARDEN.

THE BARTLEY STRAIN OF PRIMULA PULVERULENTA.

FROM various points of view these delightful pink Primulas are plants of more than ordinary worth, and having had a batch under close observation, a few points have impressed themselves upon me as being worthy of widespread publication.

First, and perhaps most important of all, is their remarkable hardihood and vigour. Planted in a bed of tolerably good soil, near enough to an old Holly hedge to be shaded and sheltered from only the roughest winds and strongest sunshine, I had plants flowering with remarkable freedom from May until mid-July (Fig. 143). Many spikes rose whorl above whorl until they were inches above three feet high, and their foliage was so massive and so rich in tone of green that even when the faded flower spikes were cut down the plants were still beautifully ornamental.

In that early cutting down of the flower spikes it seems to me I scored a point, for by relieving the plants of the strain of seed-bearing, and by occasionally soaking the bed during drought, the plants were given opportunity to develop strong crowns, and I have reaped the benefit of a second display of bloom this autumn. Theoretically, of course, an autumn-flowering Primula makes an overdraft upon its resources at the expense of next season's display. Next spring will, to some extent, test the accuracy of the theory, for a few of my plants did not bloom this autumn, and furthermore I have planted a fresh batch of strong, young, single-crowned plants which have ample time to become thoroughly established and compete with those that have flowered twice this year. I mean, however, to assist these latter in spring with a little strong nourishment applied judiciously.

Another point to the credit of these Primulas is they make uncommonly good plants in pots for an unheated greenhouse in spring, and later for the shady corners of a verandah or loggia where a few plants of non-spreading character just meet requirements. In five-inch pots, liberally watered, and fed occasionally with liquid manure the plants go on and on flowering as though time were stationary with them.

I have not troubled about varietal names of these Primulas because I find all the shades of pink delightful, and whether the crimson, golden, tawny or green eye is best I have not definitely decided; all are very pretty. *A. J. Macself.*

TREES AND SHRUBS.

CLEMATIS GRATA.

ONE rarely meets with Clematis grata in gardens; I know of only one plant within a radius of many miles from my home, and many who see it have been anxious to know its name. It is a very free-growing species and forms a tangled mass of branches and leaves. These are terminated by large corymbs of white flowers.

When the plant has become established it will produce hundreds of flowers and shows to great advantage against a dark wall or trellis. *S. Arnott.*

BUDDLEIA VARIABILIS.

THIS Buddleia and its varieties soon grow into fine specimens if planted in suitable positions, and when in full flower give a charming effect in the garden. They should be given a somewhat sheltered position and ample room to develop their branches and flowers. The rooting of a good stock of plants from cuttings is a simple matter, and none need fail in producing specimens in the best and most satisfactory condition. Cuttings made from half-ripened shoots root freely in a sandy compost either in cold frames or under hand-lights. If these cuttings are prepared at the present time they will root with freedom and may be transplanted in nursery beds in the spring, in which position each rooted plant will soon develop good-sized heads for planting where they are to remain permanently. *H. Markham.*

ESCALLONIA MONTEVIDENSIS.

THIS fine shrub has a very tantalising habit here in Gloucestershire; the flowers which are produced in profusion, usually reach the point of opening when frost checks their precociousness causing disappointment. This season, however, I have seen a very fine specimen in full flower, quite an imposing plant.

Introduced under the name of E. floribunda from New Grenada so long ago as 1827, it is only during recent years that this species has been common in cultivation.

The terminal corymbs of white flowers are slightly panicled, much branched and leafy. The leaves are oblong, obtuse, entire, of a nice full green colour, and the branches are resinous to some degree.

Being a shrub of somewhat doubtful hardiness but apparently quite at home in the west of England, a sheltered position should be afforded this Escallonia. The species is figured in *Bot. Mag.*, t. 6,404. *Ralph Arnold.*

ROSE GARDEN.

PLANTING NEW BEDS.

IT is only by giving Roses a setting entirely their own that one is able to appreciate their full beauty, and at the present time many lovers of Roses will be preoccupied in the planning and preparation of a Rose garden. It is not always possible to choose the site that one would consider ideal, for the construction of a Rose garden generally entails the making of a garden within a garden, and this frequently means restrictions as to boundaries and positions, but it is essential that the situation should be freely exposed to light and air.

The popular idea of providing shelter from the prevailing winds sometimes leads to this provision being overdone, and the making of Rose beds too near belts of trees, with the result that the plants get drawn, make soft growth and become extremely susceptible to attacks of mildew. Protection from severe winds which gather force as they sweep over exposed areas is desirable, but care should be taken that a protective belt of trees serves its purpose of breaking the force of the wind without being near enough to unduly influence the growth of the Roses.

The question of soil is a problem which creates difficulties in many localities. Undoubtedly the finest soil for Roses is a rich loam inclined to clay, and the fortunate possessor of such a soil will need do little more than trench the area and ensure perfect drainage. Many growers have only gravelly or sandy soils, however, and although not so good, they can be made suitable by deep cultivation and a liberal admixture of organic manure, while intensive feeding and watering in dry periods will be more important.

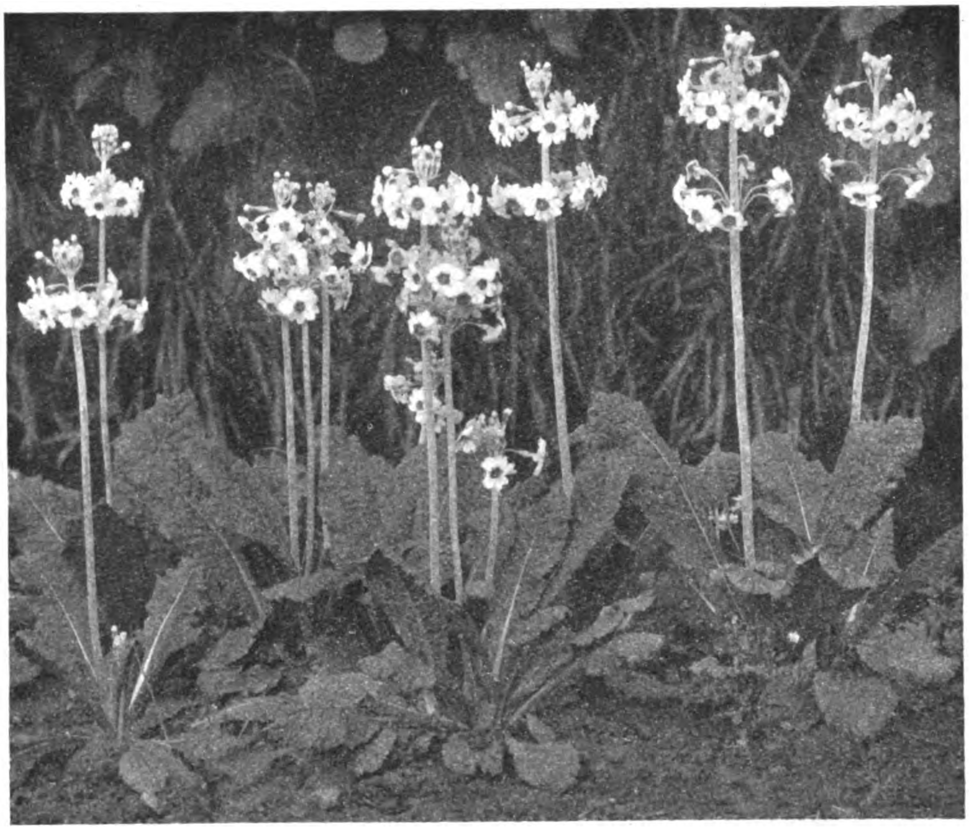

FIG. 143.—PRIMULA PULVERULENTA, BARTLEY STRAIN.

The whole area to be laid down as a Rose garden should be thoroughly prepared, not only just the sites of the beds, as beds prepared in otherwise unmoved ground act as draining pits for the whole area and frequently become waterlogged in winter. The designing of the beds will naturally take place on more or less geometrical lines, and while their size and shape may vary to meet any particular need, the most satisfactory arrangement is the one which enables the planter to keep one variety to each bed. Although planting may be done at any time when the weather is open from mid-October to March, there is no doubt that autumn planting is likely to give the best results.

In planting dwarf Roses, the point at which the plant is budded should be placed just below the surface of the soil and firm planting should be practised. Extra long shoots which might cause the swaying of the plants in the wind may be shortened when planting, but nothing more should be done till the spring. Should severe weather follow planting a covering of dry Bracken Fern placed loosely among the plants will be a great safeguard. *A. P. C.*

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SOME EXPERIENCES IN ACCLIMATISING PLANTS.

HERE, in New Zealand, we, like other gardeners, desire to grow all the good things we read of, and when our purses admit it we try to import them, but being at the "Ultima Thule" our importations have to survive a very long journey, have to brave the tropics and then suffer a reversal of seasons, that is if the Customs' inspectors do not destroy them on arrival—unfortunately a not infrequent occurrence. Sometimes special consignments of shrubs or alpines are arranged to be brought over in cool conditions, and in these circumstances I have known of one-hundred-and-twenty species and varieties of Rhododendrons successfully introduced with a loss of only about fifteen per cent, and the same with an importation of European alpines; but most of us order in the usual way from dealers and our packets come out in the mail room without any special care. The position is likely to improve shortly as experiments are being conducted from both ends, testing carriage under three different conditions in the steamers, and also as regards development of infection on the journey, for many bulbs certified healthy on shipment have arrived in a state necessitating instant destruction. Air mails, when established, should be of the greatest benefit.

My own few orders in the past fifteen years or so have comprised several from Britain, one or two from Holland, one from Japan, and one from South Africa, and some points in my experience may be of benefit to your English readers, for I realise that they also have to receive many plants from great distances.

I have had two experiences with infections. Early in 1914 I imported some bulbs from Holland before the days of inspection. Among them were one hundred Parrot Tulips and on these, under the brown tunic, was a very heavy infestation of a greenish aphis, most bulbs being completely covered. On the advice of a friend I soaked them in a strong solution of Sunlight soap before planting; only about a dozen survived the ordeal, and it was five or six years before they became thoroughly established, but they are now vigorous, flower and multiply freely, and spare bulbs are much in request among my friends. The second experience was more disastrous because I imported a number of Lilies from Japan and introduced fungous disease into my garden which ultimately decimated five hundred seedling Lilium auratum and played havoc also with my stock of L. candidum.

Another trouble is that many species do not survive the journey, or, if they do, make such a weak start that they have not sufficient vitality to withstand changes of season and onslaught of disease or insects combined, and they do not appear in a second season. Of half-a-dozen species of Orchids, for example, only Bletia hyacinthina has lived and that has not yet flowered, though I am living in hopes. Fritillaries are very difficult, especially Crown Imperials; these, however, have been established and flourish in Dunedin, as also do some smaller species, especially F. Meleagris. In a recent importation several species never appeared at all; F. macrophylla grew well but the leaves died down, the bulbs were not to be found, and my high hopes were dashed.

Erythroniums, especially E. Dens-canis varieties, have failed to grow, although I have a few American species established and have fairly numerous seedlings from the four original roots.

Species which never grow at all include several Anemones, A. apennina, A. blanda, A. ranunculoides, some Calochorti, Ixiolirion Pallasii, Pardanthus chinensis, Sanguinaria canadense and Trilliums. Daffodils take several years to become established, but Narcissus moschatus seems to have died out. Some of the species, however, have become established in only two seasons, especially N. minimus, N. cyclamineus N. triandrus albus and N. t. calathinus. Crocus species and Colchicums have varied greatly; some have grown with vigour, flowered and seeded, *e.g.*, C. Salzmannii, C. zonatus and C. Imperati, some are taking time to establish, as C. speciosus and C. Susianus, and others have simply vanished, *e.g.*, C. biflorus, C. Sieberi and C. Tommasinianus. Dutch Crocuses do badly here; Chionodoxas and Scilla bifolia are quite established, but Scilla sibirica petered out; it grows well in Dunedin.

Tulip species mostly grow though they may take several years to become really established. Two bulbs of T. sylvestris were some six years in flowering, but since then they have multiplied very freely, flowered and seeded and there are numerous seedlings. Of two bulbs of T. Greigii, one survived but did not flower for ten years; then, after two flowering seasons I moved to another garden and T. Greigii has not appeared. I hope it has only sulked for a season. Of other species, T. linifolia has disappeared, but others, T. Eichleri, T. Kaufmanniana and T. saxatilis, T. Clusiana and T. praestans, are all promising well. Winter Aconites are not happy here; of one hundred imported almost all are gone, but I hope the few survivors may save the situation.

Snowdrops provide the greatest of surprises. They do very well indeed in the south of New Zealand. I imported one hundred Galanthus Elwesii twelve years ago. They gradually dwindled to two but these two have begun to grow vigorously, give offsets and set seeds, and I hope will establish a strain that will do well here. To my surprise I found in an old garden here a colony of several hundreds of G. nivalis and have been given a dozen. Until recently I had despaired of them and thought our only hope would be to import, if possible, species growing in volcanic soil near Vesuvius, as our local soil is volcanic, but evidently if a large enough number is tried a few individuals may become established. This now seems to be happening with Dutch Crocuses.

As I have indicated, most species require several seasons to become adjusted, but a recent experience has been delightful. A Syrian patient from Lebanon to whom I showed some hardy Cyclamens (C. neapolitanum, I think), recognised the plant and gave it a Syrian name—Bakhür Mariam, the Incense of Mary. Her brother brought out a large number of corms of a Cyclamen of which I received some, and in this their second season they are growing vigorously, flowering, and seem to be setting seeds. I imagine the species is C. libanoticum, and I find them very interesting in their morphology. I believe they represent a more primitive type than either C. persicum or any of the other hardy Cyclamens. The flowers are very squat, with short, rosy, reflexed petals, with a very dark blotch at the base, and the lower rim pale, almost white, but the corm is the most striking feature. As all gardeners know, the greenhouse Cyclamen develops roots from its lower surface and edge, and leaves and flowers from most of the upper surface; in the usual run of hardy Cyclamens the under surface is smooth and rounded, but from the upper surface and edge, roots, leaves and flowers are emitted; but in both the seed produces a rounded corm with leaves produced from one point at the top and roots from one point below. My Syrian species retains this juvenile form of corm. The corms are smooth, round and flattened from above down. In the centres of the upper surface a small stem protrudes from which leaves and flowers are given off while the roots spring from a point at the centre of the lower surface.

FIG. 144.—VIEW IN ONE OF THE PARKS LAID OUT ON THE SITE OF THE OLD FORTIFICATIONS, COPENHAGEN.
(see p. 311).

I am sure this is an observation that would appeal to Mr. E. A. Bowles.

To gardeners in the Home Country the question of hardiness seems to be the all important consideration. In this district that is of no concern at all. Our difficulties in acclimatising plants must reside mostly in the individual constitution and power of adaptation of the plant concerned. In the case of Snowdrops mentioned above, success has been due probably to a chance variation in a few individuals. I believe the same may hold good with some New Zealand plants in England, especially in cases where seed is of little use. I think especially of our species of Ranunculus. I believe that R. Lyallii could be sent to England in large batches in cold storage, or at least in cool conditions, and that it could be well established at first in the Lake District, for I imagine the climate there represents that of Dunedin where R. Lyallii does very well in open borders. *W. M. Thomson, M.A., Hawera, Taranaki, N.Z.*

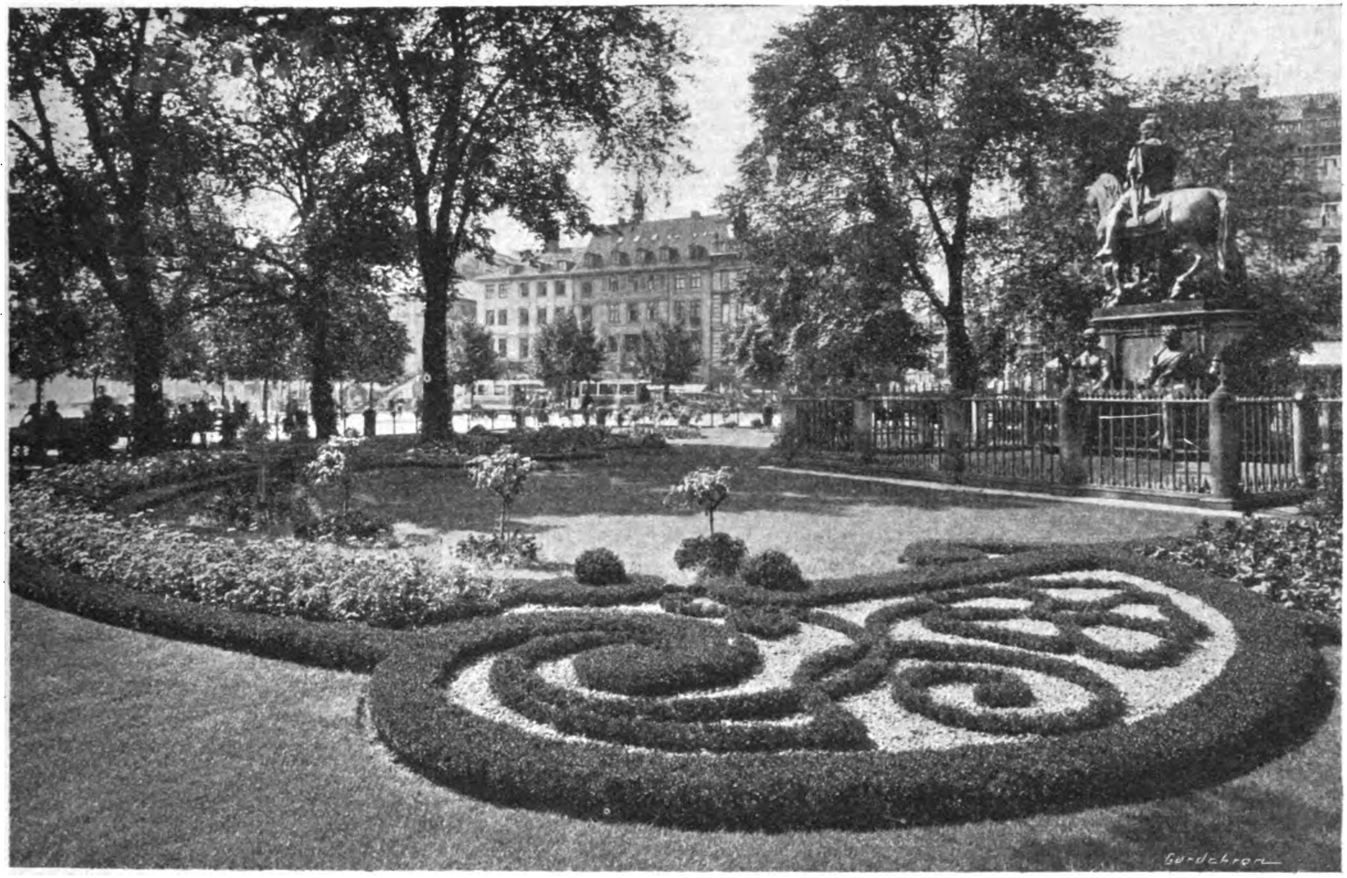

FIG. 145.—THE KONGENS NYTORV GARDENS, COPENHAGEN.

COPENHAGEN MUNICIPAL GARDENS.

The Danish capital is singularly rich in "things of beauty"—buildings of rare architectural merit and charm, spires and domes on the copper of which time has bestowed an exquisite green patina, and public gardens and parks, planned with consummate skill and judgment and tended with never failing care.

M. Fabricius Hansen, the Director of the Municipal Gardens, thoroughly understands his business, and the municipal nurseries furnish him with an apparently inexhaustible wealth of seasonable flowering plants and shrubs. The Danes love flowers; one sees far more plants in Danish than in English homes, and in few cities do the florists' windows display a more cultured and artistic taste for assembling floral decorations than in Copenhagen.

One striking feature of the public gardens of this delightful capital is this, that they are always laid out in harmony with their surroundings; the often close vicinity of handsome buildings, some modern, others with an unmistakeable air of *l'ancien régime*, impresses upon them a certain formal stamp, which is rarely seen, for instance, in a London park, where mass effects, albeit of the loveliest flowers, are more often than not resorted to. The effect here is generally all one could wish for, but there are squares and corners in London where very little, if anything, is done, and where one cannot help feeling that many a chance has been neglected.

The public gardens of Copenhagen are all on the level and of comparatively modest compass, but round the land side of the old city of Copenhagen, between this and the suburbs and more modern extensions, the old ramparts and moats have been transformed into an almost unbroken belt of parks and gardens. The Orsted Park, the Botanical Gardens and the East Park, with their hills and expanses of water (Fig. 144), have lent themselves admirably to a most effective planning.

One of our illustrations (Fig. 145) shows the centre of the principal square, Kongens Nytorv, (the King's New Market) in the centre of which stands an old equestrian statue of King Christian V, and for a background on the east side one has the Palace of Charlottenberg. In this setting the quaintly stylish and ornamental Box-edged system of beds completes the fitness of things in a happy manner. These beds, in their intriguing curves, are filled with the best of flowering plants, according to the season of the year, the programme of change even including a complete display of suitable-sized Rhododendrons. It is altogether a very perfect arrangement.

Round the Glyptothek, the famous museum for sculpture, is a garden of a different kind, the straight lines of which are in keeping with this striking modern building (Fig, 146). Specimens of sculpture enhance the aspect of this garden, over which there is a chastened serenity.

The central portion of a broad boulevard is transformed into long flower beds, a very attractive exploitation of the space, which is also to be found in some Stockholm streets and several English seaside places.

The landscape element is more dominant in the belt of parks and gardens on the old fortification area, already referred to. But decorative garden-craft is also manifest here, especially in the Orsted Park, and there is one direction in which these and other Copenhagen parks stand unrivalled: their profusion of ornamental and monumental sculpture, thanks to the munificence of two eminent citizens, father and son. No other capital can in this respect vie with the Danish.

The Botanical Garden, although a little cramped, contains many beauty spots, more especially the rockery gardens on the old ramparts. Several formal gardens are also found along one side of the Town Hall and in front of the Royal State Library. *George Brochner.*

SECOND HAND GARDEN TOOLS.

About this time of the year when people are giving up their holdings and other property, many garden tools and appliances find their way into the second-hand market. Such goods frequently present a favourable purchase, but it is a purchase which may not be without a certain amount of risk, for there is always the chance that the seller is not the true owner of what he sells, and if this is so the person from whom the goods were obtained and he to whom they were sold will want to know who is entitled to them. It is, of course, a question of which of the two innocent parties shall suffer, for if the buyer knew that the goods he purchased were obtained by some dishonest means, he cannot expect the law to help him to retain them.

Let us first take the case of a man who has purchased some goods which he discovers to have been stolen, and the true owner is asking for their return or value. Who can have the goods, the innocent buyer from a thief or the true owner from whom they were stolen? Before this question can be answered satisfactorily it is necessary to discover what is meant by stealing and theft, for the position of a purchaser of "stolen goods" in the limited sense of the words, is much worse than that of one who buys goods which have been obtained by fraud or false pretences or any other means less than actual stealing.

In stealing the goods are obtained without any pretence of consent being given by the true owner, it is, in fact, the taking of goods out of the possession of the rightful owner and without his consent. If the goods have been thus obtained and sold to a third party, even though this person does not know and has no reason to believe that they have been stolen, as a general rule the true owner has a better right to them than the purchaser from the thief, and can demand their return if he can prove that they were stolen from him. The person who has to give them up, of course, has a right to claim his money back from the thief, but it is a right which it is seldom worth exercising, even if the thief can be traced.

There is an exception to this general rule in the case of goods having been sold in "Market Overt." A sale in Market Overt takes place when the goods are bought in any public market or in any shop in London where it is usual to sell such goods. In the case then of goods having been purchased in Market Overt, before the true owner can claim them from an innocent buyer, he must bring the thief to justice and obtain his conviction, when the goods will be restored to him.

Thus it will be seen that when a man is unfortunate enough to buy goods which have been stolen, his chances of retaining them, should the true owner turn up and claim them, are very remote. Where, however, they have been obtained by some wrongful means less than stealing, his chances are often superior to those of the true owner. How then can goods be obtained by wrongful means which are less than stealing (*i.e.*, larceny)? The most frequent example of such an obtaining is by false pretences. In false pretences and offences less than larceny the goods are not taken without the consent of the true owner, they are taken with his consent, owing to some false pretence made by the swindler. And from the point of view of a purchaser, this is a most important distinction between obtaining goods by larceny and by wrongful means less than larceny. In larceny no consent is obtained; in offences less than larceny the goods are often willingly handed over to the swindler, with the intent that he should keep them as owner.

In the case of goods which have been obtained by an offence less than larceny, then an innocent purchaser has a right to keep them until the swindler has been convicted, and even then the original owner has no right to have them handed over to him unless he can get an order for their restitution from the Court. And as such an order will not be made to the prejudice of an innocent buyer from the swindler, such a buyer has a very fair chance of keeping his purchase.

We have yet to consider the hire-purchase agreement. It is very common now for firms to allow their customers to use goods without paying for them at the time, but to take the purchase money in weekly or monthly instalments, and should anyone buy goods which are held under such an agreement, it will have to be decided whether the buyer or the true owner can claim them. To make this decision it will be necessary to examine the agreement under which the goods are held, for there are two ways of making a so-called "hire-purchase agreement"; it may be either a sale out and out, with an agreement to pay the price by instalments or it may be a hiring of the goods until the last instalment is paid, when a sale will take place.

If the agreement is an out and out sale in the first place and the price is being paid by instalments, then the buyer can sell the goods to a purchaser who will be allowed to retain them against the original owner; as, however, such an agreement is rarely made by the larger firms and usually only occurs where a private owner sells to another private buyer and allows him to pay for the goods by instalments, the position of a buyer from a hire-purchaser is not so advantageous as it might at first sight appear to be.

The most general kind of hire-purchase agreement is so worded as to be a hiring of the goods, no sale taking place until the last instalment is paid, and if this is the case a buyer from the hire-purchaser will obtain no better right to the goods than the person from whom he bought them had. That is, he will take them subject to the unpaid instalments. *H. A. Sharman.*

NURSERY NOTES.

MR. H. HEMSLEY, CRAWLEY.

Mr. H. Hemsley has achieved success in two notable directions, for he is the author of the most practical of all the numerous works on rock gardens and the raiser of an entirely new race of Sidalceas, for which he just missed the distinction of winning the Abol Cup, offered at the Staffordshire and Midland County show for an exhibit "showing the greatest advancement since the war in any one variety, species or family of plants."

To these successes may be added the establishing of a successful nursery at Crawley with extensive frontage on the London and Brighton road and adjoining the Tilgate Estate. The nursery contains such stock as is necessary for the extensive landscape work and formation of rock gardens which Mr. Hemsley is called upon to undertake for clients in all parts of the country; an excellent lot of fruit trees, Roses, Dahlias and hardy border flowers. The Dahlias at the time of our visit were making a glorious show; most of them are varieties raised by Mr. Hemsley, including the Collerette, Pompon, Charm, Cactus, Single and Mignon types, all with stiff, wiry stems that raise the flowers well above the foliage.

The stock of alpines is a very extensive one; these plants are all grown in pots plunged in ashes and sheltered by a series of well-clipped Hornbeam hedges. The shrubs include the dwarf Cupressus tamaricifolia, Tilgate Variety, for which Mr. Hemsley received the R.H.S. Award of Merit: this choice, dwarf-growing Conifer is a splendid subject for the rock garden.

As Mr. Hemsley's Sidalceas have won such high praise and are of great promise as garden plants, the following particulars of them may be interesting. The first cross was obtained in 1912, when Mr. Hemsley raised a new and distinct variety of claret colour. The hybrid flowered early in July and had much the same habit as that of Sidalcea Rose Queen. The other form produced a corymbose, flat head of flowers much later, so late that Mr. Hemsley almost discarded it, for it seemed impossible to get it to bloom before the advent of frost. However, it was retained, and used for crossing with the other and also with Rose Queen. Just as these seedlings were in bloom the war broke out and the Sidalceas had to be left to the care of others whilst Mr. Hemsley went to undertake more important work for his country. These early seedlings showed a great advance on anything in the family previously, for beside having a wider range of colouring they flowered over a longer period than the older type. It was not until the spring of 1919 that Mr. Hemsley again resumed his work with these flowers, and he was so successful that in July, 1923, the Scientific Committee of the R.H.S. awarded him the Royal Horticultural Society's Certificate of Appreciation for raising the strain. Improvement has continued year by year until this summer he was able to show varieties of fifty distinct shades of colour at the Staffordshire Floral Fête, for which he was awarded a Large Gold Medal.

Some of the varieties are not much more than a foot high, whilst others attain to a height of six feet with intermediates between these dwarfs and giants. The taller varieties are late-flowering and of striking colours, but as they require extra staking, Mr. Hemsley does not consider them of such value for gardens as the medium-sized ones.

Mr. Hemsley's next step is to endeavour to obtain varieties with much larger flowers, which range from the purest white to the darkest crimson, including practically every shade of rose, pink, claret, carmine, mahogany-red and salmon, some of the varieties being single and others double. A considerable amount of seed has been harvested this year and the demand is such that it exceeds the supply, but so far only a few of the named varieties have been distributed.

NOTICES OF BOOKS.

Fruit and its Cultivation.

Even the most ungenerous reviewer would find it difficult to criticise adversely a book that has reached its fourth edition, in as much as the regular sale of a technical book is evidence of its usefulness. But we have no desire to be ungenerous with regard to Mr. T. W. Sanders' new edition of *Fruit and its Cultivation**, as it is a substantial work of 292 pages, plus five pages of index, nine coloured plates of fruits, six coloured illustrations of insect pests, nearly three dozen full page monochrome plates, and the better part of two hundred diagrams in the text.

Mr. Sanders discusses practically all kinds of fruits that are hardy in the British Isles, and commences the various sections with brief historical notes of the kind of fruit he is dealing with, following these with advice on propagation, soils, planting, and varieties. Methods of storing the fruits are detailed in the chapters on Apples, Pears, Nuts and Plums.

One section of the book is devoted to advice concerning practical work, especially in connection with propagation, planting, pruning, training, manuring and protecting the fruits of the several kinds and varieties mentioned, while in the third section the diseases and insect pests that worry the fruit-grower are described and methods given for their prevention or cure.

The fourth and last section deals with the cultivation of fruit for market, and includes useful tables showing the season of the most suitable varieties and the best style of tree for each.

The descriptions of the recommended varieties of fruits are quite good, and we are glad to observe that Mr. Sanders indicates those varieties which are self-fertile and also those that are self-sterile. Great pains have been taken to make the book a thorough guide to those who cultivate hardy fruits, and also to make it as interesting as possible; for instance, under Gooseberries, the average weight is given of a single berry of the exhibition or "big" varieties. Our only objection in connection with the work is that the title is not sufficiently explicit, for as fruits under glass are not taken into consideration, the adjectival use of the word "hardy" would have better defined the scope of this extremely useful publication.

Goldfish.†

We have received a book on Goldfish, illustrated with several photographs and drawings, that would be of interest to our numerous readers who keep these ornamental fishes in ponds and aquaria. These fishes are mainly forms of the common carp, presenting a condition of albinism to which the changes in colour are due, while abnormal-development of eyes, fins and tail have given rise to numerous types.

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* *Fruit and its Cultivation*, by T. W. Sanders. W. H. and L. Collingridge, 148, Aldersgate Street, E.C. Price 8s., post free.

† *Goldfish Culture for Amateurs.* By A. E. Hodge, F.Z.S., and Arthur Derham; London, H. F. and G. Witherby. Price 5s. net.

Much useful information is given on aquariums, suitable aquatics for associating with the fish and, most valuable of all, the best foods for goldfish. Those who use ants' eggs and Rice wafer as food are informed that the value of these is "entirely negligible or, at the most, no higher than that of pappy white bread." The need for shade to the fish is little understood and we know of many cases where goldfish have been killed by exposing them to strong sunlight in a window. Covering the surface of the aquaria with Duckweed will provide not only shade but useful food. Perhaps the most useful chapter to gardeners is the one on "Outdoor Ponds and Pools." and we are glad the authors have advised their readers against introducing fish into cement ponds before the "acid" from the cement has disappeared, for we know of several cases where goldfish have been killed through this cause. The placing of one or two small fishes of little value, such as minnows, in newly-made cement pools for testing if any of the poisons released by the action of water on cement are still present, is a valuable hint.

PUBLIC PARKS AND GARDENS.

BERMONDSEY OPEN SPACES.

It is hard to realise that modern Bermondsey, with its busy industry and teeming population was a place of fields and market gardens less than one hundred years ago, and nearly all meadows and woodlands in Saxon times, yet Southwark Park, which forms part of the Borough of Bermondsey, although situated in Rotherhithe, was formed in 1864 from sixty-three acres of land then used as market gardens. There is, however, no such available land now and the progressive borough authorities in their endeavour to provide brightness and pleasure for the burgesses in forming public gardens, have resorted to the spacious churchyards of the several fine churches which were presumably laid out when land was of comparatively little value. Thus they have made a series of little parks in the churchyards under the advice of the late Mr. W. Aggett and his successor Mr. W. H. Johns. They have also beautified other open spaces with flowers or converted them into sports grounds for children, such at those at Coxson's Place, between Tower Bridge Road and Tooley Street, the old Quakers' burial ground in the borough, and the open space adjoining the public library in Tooley Street.

The gravestones in the churchyards have been carefully arranged near the boundaries and the space available laid out as flower gardens, with plenty of seats where the public can rest and enjoy the beauty of the flowers, grass and trees.

The principal of these churchyards are those of St. James' and St. John's in the Horsleydown district, the churchyard of St. Mary Magdalen, old Bermondsey, and St. Mary's, Rotherhithe. All these churchyards are now very attractive by reason of the fine displays of Dahlias, for Mr. Aggett was growing Dahlias in these Bermondsey open spaces some fifteen or twenty years ago, and long before they were made a feature in some of the other London parks. But the floral display is not all of Dahlias, for the aim of the authorities and superintendent is to provide a succession of bright flowers from February to November, commencing with such bulbs as Crocuses, Daffodils, Tulips and Hyacinths, followed by Dutch and Spanish Irises, Wallflowers, Polyanthuses, Antirrhinums, and so on, until the beds are furnished with summer-flowering plants.

Perhaps the most interesting of the churchyards is that of St. James; a typical bed in this open space is planted with Crocuses that are removed when they are finished and refurnished with bedding Pansies or Violas which flower in association with Tulips, these in turn being followed by Paisley Gem or Coltness Gem Dahlias.

Mr. Johns finds that while Wallflowers do not winter well in the atmosphere of this manufacturing centre of London, they do well planted in spring with Polyanthuses, Double Daisies and edged with the Primula of the Juliae type known as Little Jewel. Cheiranthus Allionii succeeds well and also Erysimum linifolium and A. alpinum. One series of beds comprising four outer beds surrounding a central circular one has been very beautiful all the summer with big plants of Eucalyptus Globulus, Pittosporum Mayi, Grevillea robusta and Paul Crampel Pelargoniums over a ground of Helichrysum rosmarinifolium and an edging of golden-leaved Fuchsias.

Some of the borders on the outskirts of the churchyard are filled with hardy herbaceous perennials, and it is interesting to know that Dimorphotheca Ecklonis, D. aurantiaca and D. pluvialis all do well in this smoke-laden atmosphere. There is no finer Michaelmas Daisy than Climax for a town garden; it grows in Bermondsey like a weed and makes a fine background to this mixed flower border. Just now, however, the pride of place is taken by the Dahlias, of which there are enormous numbers and varieties. Nearly all sections of the flower are grown, and it may be of use to others who garden in large towns to enumerate some of the varieties which succeed best.

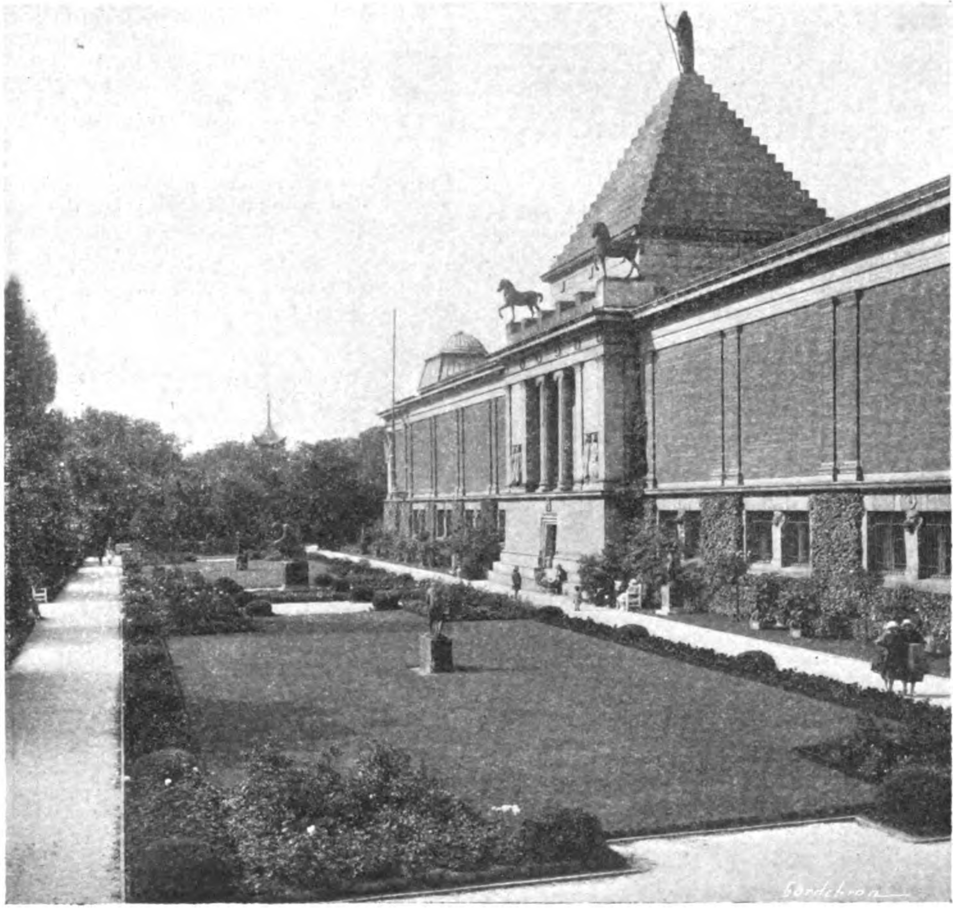


FIG. 146.—THE GARDENS OF THE GLYPTOTHEK MUSEUM, COPENHAGEN.

(see p. 311.)

Of the Star type, Crimson Star, Yellow Star, Crawley Star and White Star give uncommonly good results, while of the Collerette section, Lucien, Holyrood and Doon are three that succeed well, and others in their sections are, Decoratives: De Rose, Prince of Wales and Delice; Camellia-flowered: John van Citters, Stolze von Berlin and Glow; Decoratives: Artis and Boston; Cactus-flowered: Mrs. Forrester, Paton; and of the Bedders: Barlow's Bedder, Kaiserin, Dobbie's Bedder, Crimson Flag, Oriole and Olivia. If greater variety is required, others that may be relied upon are Extase, Madame Krelage, Joyce Goddard, White Queen, Clothilde, The Prince, Dazzler, Amy Barillet, Lemur and Clematis. The outstanding variety is Coltness Gem, which Mr. Johns has planted in several large beds, besides utilising it as a front row plant to some of the borders. In some cases the dwarf Dunecht, yellow, is placed next to Coltness Gem and the contrast is very effective. Mr. Johns has raised several seedlings of the Mignon type, one with purple flowers rather taller than Coltness Gem, and another very good yellow which he has named Yellow Coltness.

The churchyard at St. Mary's, Rotherhithe, has an exceptionally fine border of Dahlias planted against a background of Hollyhocks, which are, of course, now over, but they have done exceedingly well in this old churchyard.

The churchyard of Mary Magdalene, Old Bermondsey, is another very fine park in a churchyard, and here also Dahlias are the most conspicuous subjects just now, although a variety of other flowers have contributed to its beautification throughout the season. In this churchyard is a spreading tree of Cotoneaster frigida with branches covering an area of ten yards on either side. There are also other interesting trees, including Catalpas, Paulownias, Mulberries, Ailanthus, double-flowered Cherries, Planes and Pyrus Aria, which add to the amenities of this open space.

At St. John's Churchyard, the old Quakers' burial ground, and the open space adjoining the public library, bright flowers are planted wherever possible in association with such trees as are likely to succeed, making these centres restful, peaceful places where the public can find relaxation and enjoyment from the crowded streets.

Much valuable work has been done by Mr. W. Aggett in this direction in the past, and Mr. Johns, his successor, is maintaining and extending this beautifying of one of London's most densely populated districts.

MARKET FRUIT GARDEN.

The south-east of England seems to have been favoured in the matter of early autumn weather. Only 0.58 inch of rain fell at my place during September, the lowest figure for the month appearing in my records, which go back to 1911. The nearest approach to it was in the great drought year, 1921, when the September rainfall amounted to 0.60 inch. The effect on fruit trees has been striking. Apples, which were ripening very slowly, soon acquired colour, and the foliage took on a much healthier appearance. The effect on next year's crops can hardly fail to be beneficial. We have had too many wet summers of late, and various troubles, particularly those of fungous origin, have been encouraged in consequence. Drier conditions would, I think, do more than anything to improve matters. The weather has been favourable also for land-cleaning operations, giving the best opportunity for the suppression of weeds that we have had for a long time. Suitable autumn weather for this work is always a great boon, for winter labour is lightened and a cleaner start obtained in the following spring.

Crops Finished.

My pickers were paid off for the season on the last day of September, practically all the Apples having been gathered by then. I doubt if the work has ever been finished so early before. This shows how very short the crop was. Some varieties would no doubt have been all the better for hanging a little longer; but it is useless to leave a few scattered Apples to the mercy of the birds, which have been particularly troublesome this year. The scarcity of late Apples was even more forcibly impressed on me by a recent journey by road through part of Kent. I have never seen so many trees with so little fruit on them. The great majority, in fact, were absolutely barren. In nearly every case where trees were seen to be carrying a fair crop the variety was Lord Derby. This Apple seems to have been the only one to give a really good account of itself in the district this season. The scarcity of Bramley's Seedling is extraordinary. The representative of a leading London salesman has been round almost begging for supplies, and predicting a rise in price up to £1 a bushel in a few weeks' time. My own opinion is that imports, although mainly of dessert varieties, will prevent any such rise until early spring; so I have already sold nearly all mine at 12s. a bushel. When the price is so satisfactory there is little temptation to store, particularly as Apples are not keeping at all well.

Late Plums.

Monarch proved to be the best Plum crop of the year with me. Not only was the yield heavy, but the fruit was large and sound, being free from the cracking and brown rot which so seriously reduced the marketable supply of most varieties. Monarch is a thoroughly good Plum, except that it does not favour us with a full crop as often as it should. Previous to this year, I have not had a heavy yield of this variety since 1920. Moreover, the failure is often complete. Probably the early blooming period of this Plum is chiefly to blame, as this renders it particularly liable to frost damage. Our late varieties, as a whole, are not too satisfactory. President, which follows Monarch, gave me the highest prices of the season, but the crop was very light. I have seldom had a heavy yield of this variety, largely, because it seems to be specially liable to the blossom wilt form of brown wilt. Good late varieties are much to be desired, because they encounter less competition from the Continent than early kinds. One of the most promising is Giant Prune, which was raised in America by Mr. Burbank, and is being planted for market culture to some extent. I saw quite a good crop of it recently at the East Malling Research Station. The fruit closely resembles Pond's Seedling, which was one of the parents. It may almost be regarded as a late edition of that variety. Another Plum which impressed me at the same place was Warwick Drooper, one of those useful old local varieties which are grown on their own roots. The peculiarity of this tree is that the branches droop, like those of a Weeping Willow, under the weight of the enormous crop, and therefore do not break, It is a yellow Plum, with an attractive flush on the exposed side; and the flavour is decidedly above the average.

Apples in their "Off" Year.

This season, unfortunately, gives us an excellent opportunity to observe the appearance of Apples in their "off" year—that is, trees which are bearing little or nothing because they cropped fully last season. One might expect that what little fruit they have on them would be extra large and of good quality. Far from this being the case, it is undersized and generally rough and of poor appearance. I noticed this particularly in the case of a large tree of Lane's Prince Albert in a neighbour's garden. This tree carried a heavy crop of fine fruit last year, and I watched it in the spring to see whether it would, like my own trees of this variety, indulge in an "off" year. Rather to my annoyance, it bloomed again fully, and set a fair amount of fruit; but the Apples have never developed properly and are mostly small, rough, and almost worthless. It seems almost as if the tree made a mistake in bearing at all, and could produce nothing but a mere apology for a crop. It is further particularly noticeable this year that trees in their "off" season are generally of poor and unhealthy appearance altogether. Where one would expect exceptional growth and flourishing foliage, owing to the absence of crop, there is nothing of the kind. The leaves have been sickly and the growth less than on the trees that have carried a full crop. I have never before noticed this "off" year appearance in such marked degree, but no doubt it is characteristic. It is interesting to compare the "off" year trees with others which are not cropping, but which are not truly in their "off" year because thy did not bear last season either. The latter look very flourishing, having the vigorous appearance which one would expect in trees that are not undergoing the strain of a crop of fruit.

Bush Fruits.

Work to be started now is the cleaning and manuring of bush fruits. Hitherto I have always carried on with horse cultivation as late as possible in the autumn, and finished up by drawing a water furrow down the middle. This left the actual rows to be forked over by hand during the winter. I find, however, that the great majority of growers have given up all digging, the cost of which is now almost prohibitive. Most of them clean the rows by scraping the weeds off into the alleys with hoes, and afterwards plough between the rows in such a way as to throw some soil up to the bushes. Manure is generally applied before the ploughing. I am going to try this plan, which is quite likely better than digging, because it does not disturb the roots so much. There is no harm in light pointing with forks in the rows, as is generally done in gardens; but on a fruit farm it too often comes to fairly deep digging in order to bury the weeds; and then injury is likely to be done to a shallow-rooted subject like Black Currants. A colony of small growers in my district, who specialise in bush fruits, and grow them very well indeed, would not dream of any digging in the rows, although all their work is done by hand. They hoe off the weeds into the alleys, as already described, or even hand weed under Gooseberry bushes and amongst Raspberries. The weeds are finally dug in between the rows, after spreading manure. As digging proceeds, some of the soil is thrown back to the bushes to replace that scraped away by the hoes, and to cover the manure. What troubles me is that, no matter how you apply manure, it is bound to be brought up again the next year full of roots. I cannot see any way of preventing this.

Nut Weevil.

In an unfortunate season, even Cob-nuts have proved disappointing. What was at first a very fair crop was greatly thinned before picking time by the dropping of a large proportion of the Nuts because they contained weevil larvae. I notice that the same thing has happened in the case of the Hazel Nuts in the hedgerows. There is, of course, a certain amount of weevil damage every year, but it has not before been really serious with me. I see from Mr. F. V. Theobald's book, *Insect Pests of Fruit*, that spraying with arsenate of lead in early summer is one method of dealing with this pest. As the trees are never quite free from caterpillars at that time, I think this would be well worth doing as a remedy for both troubles.

Summer Pruning Failure.

In previous notes (p. 53) I referred to a system of summer pruning which I saw apparently giving striking results in bringing young Apples on free stock into early bearing at the Norfolk Experimental Station. I tried this system on young trees of Cox's Orange Pippin and Early Victoria, and, in my conditions, this season, it has been a complete failure. I do not think a single instance can be found where a fruit bud has been formed where it should have been. In every case secondary shoots pushed out vigorously, and, on these being rubbed out, further shoots appeared. A neighbouring grower had a similar failure with the system; so the result cannot be attributed to errors in my own work. I am forced to the conclusion that the conditions at the experimental station are particularly conducive to early fruitfulness, as, indeed, one would expect from the soil and climate, and that the trees there would have come into early bearing under any system of pruning that was not too severe. I cannot remember now whether any control trees were left to compare with those under treatment. Anyhow, I am afraid the system cannot be relied upon to work under all conditions. Nothing has been lost by trying it on my trees, as, although the special result aimed at has not been achieved, it has answered in exactly the same way as the ordinary method of summer pruning practised in many gardens. *Market Grower.*

REMARKS ON THE CONDITION OF THE FRUIT CROPS.

(See Tables and Summaries, Ante, pp. 111-117.)

(*Continued from p.* 294.)

ENGLAND, S.W.

Cornwall.—On the whole, the fruit crops are again disappointing. The fruit now remaining on the trees are free from scab and there has been no great infestation of aphides on the trees. We have had delightful weather conditions since the year began; there appears to me nothing to account for the dearth of fruit, the blossom was ample but the flowers lacked in texture. Small fruits were plentiful. Strawberries were a failure, and that report is general. The plants are very weak, the leaves red, the new growths miserably weak, and the crop was hardly worth netting. Neither soil nor climate would account for this; a large grower informed me that his crop was but one-tenth of what it should be. *Harry Williams, Tolvean Gardens, Redruth.*

——All kinds of fruit trees in this nine-acre, walled kitchen garden blossomed abundantly but, owing to the frosts and cutting winds in late May, the crops are disappointing. Raspberries and Loganberries were far above the average, both in quality and quantity, but Currants were undercropped through the leaves being stripped from the bushes by the winds. Morello Cherries were very fine. Strawberries suffered through late frosts, but although undercropped, gave very fine fruits;

Figs also were disappointing, as there was a splendid set of fruit. *E. E. Algate, Mount Edgcumbe Gardens, Nr. Plymouth.*

Devonshire.—The prospects were good, but owing to frosts and cold winds from all quarters the blossoms did not develop properly, consequently the fruits were malformed and dropped freely; these troubles, coupled with a very severe attack of aphis, has resulted in a very poor fruit year. *J. A. Stidston, Bishopsteignton Gardens, Teignmouth.*

——There was an abundance of blossom of all the fruit trees, and the cause of failure of the crops is rather a puzzle. The codlin moth may be the reason for the Apple crop being deficient, and probably drought resulted in a great check to some others. Strawberries were the worst crop I have ever had. Caterpillars were numerous on White Currants, Red Currants and Gooseberries. *Gilbert Sleep, Hartland Abbey Gardens.*

Somersetshire.—Blossom in abundance was evident on nearly all fruit tree's in the spring, but the crops produced on many Apple and Plum trees were somewhat poor in places; on the other hand, the trees that are bearing have more fruits than they can finish successfully. Varieties of Apples that are scarce include Cox's Orange Pippin, Blenheim Pippin, Bramley's Seedling and Newton Wonder. Nearly all Gages were scarce here. Pears are a good crop and the fruits required thinning. Cherries and Apricots were a poor yield, but Peaches and Nectarines good average crops. Figs were satisfactory. All bush fruits were again finely cropped, especially Gooseberries and Black Currants. The Nut crop is the best one we have had for some years. A very cold May with north-east winds retarded growths on fruit trees, and also favoured the spread of aphides to a large extent. *J. Glasheen, Hestercombe, Taunton.*

——The fruit crops are, on the whole, very gratifying. During the past few years certain kinds of fruits have been plentiful, while others have been total failures. The present season's crops are more uniform. I have no total failure to report this time; "average" more correctly describes the yields, with the exception of Plums, which were a little under. The Apple orchards in this county are somewhat extensive and are regarded as an important crop; the prime fruits are sent to market and the remainder used in bulk for the production of cider. Apple trees are carrying good crops. Peaches and Nectarines on walls were plentiful, and Cherries yielded well. Strawberries, Raspberries and Gooseberries finished excellent fruits. Nuts are abundant. Insect pests have not been so troublesome as usual. The heavy rains during June washed the trees thoroughly and doubtless kept pests in check. *J. Yandell, Halswell Park Gardens, Bridgwater.*

Gloucestershire.—Not for several years have we had such a beautiful and bountiful show of bloom as in the spring of 1926; the Apple, Pear and Plum trees were a grand sight, Apple trees particularly, but frosts and cold winds destroyed the flowers severely on many trees. Yet in some few sheltered gardens all of the kinds of fruits mentioned set heavy crops. Some Apple trees shed a lot of their fruits in July owing to drought caused by a peculiar combination of hot sunshine and cold north-east and north-west winds. From the same cause aphides become very troublesome on Plums. In the orchards crops are far below the average. Strawberries were very good in quality and quantity but the season was somewhat shortened by drought. Many Currant bushes are blighted. Raspberries and Loganberries set fine crops. The soil is a heavy, yellow clay with rock below at depths of one foot to four feet. *John Ettle, 201, Henleaze Road, Westbury-on-Trym, Bristol.*

——The amount of Apple blossom was exceptional, but untoward weather at the time of flowering ruined the prospect of a crop. Trees of Mère de Ménage, Stirling Castle, Wealthy, Transparent, The Queen, James Grieve and Annie Elizabeth furnished a small crop. Black Currants also suffered badly from cold weather and were affected by aphis. There is a marked difference in the cleanliness and appearance of Plums sprayed with the new tar spray last winter, and those not treated. Our soil is a medium loam resting on the Gloucestershire brash. *W. J. Mitchell, Westonbirt Gardens, Tetbury.*

——Early prospects of most fruits were good but a prolonged spell of wet, sunless weather and late frosts very much reduced the chances of all the mid-season-flowering fruits. The earlier- and later-flowering varieties escaped this, and consequently we had good crops of fruit amongst these sections. Of Apples, James Grieve and Lane's Prince Albert are carrying good crops. Early Strawberries suffered much from rain and slugs, but later varieties gave good returns. Cherries and Plums seldom seem to give good crops in this locality; possibly the soil, which is cold clay over limestone does not suit stone fruits. *S. W. Dance, Williamstrip Gardens, Fairford.*

——The Apple crop is a failure. The trees appeared to bloom very well but during that period the weather was cold, probably too cold for fructification. Varieties fruiting are: Lane's Prince Albert, Ecklinville Seedling, Lord Derby and Charles Ross. Pears are a fair crop and clean. Plums and Damsons were very good, and outside Peaches were also good. Gooseberries were most abundant, Black Currants a fine crop, Strawberries were plentiful, and Raspberries and Red Currants fair crops. Our soil is friable, overlying the old red sandstone, but so far as I can gather, the Apple trees growing on clay soils in the district are barren. *John Banting, Tetworth Gardens, Falfield.*

——The season is, on the whole, disappointing; Pear and Plum trees bloomed splendidly. and while there is a fair crop of the latter, Pears are very patchy, some varieties cropping well and others badly. Apples, generally, are scarce, the cause for this no doubt being the unfavourable climatic conditions during the flowering period. Varieties that flowered early appear to be carrying the best crops. There will be a keen demand for cider Apples and perry Pears, both of which are scarce. Amongst small fruits Black Currants suffered from an unprecedented attack of aphis which ruined the crops, except where the bushes were sprayed with a carbolinum wash. Climatic conditions in May were unfavourable for Strawberries and Raspberries, and both crops were below the average in quantity and quality. *G. H. Hollingworth, Shire Hall, Gloucester.*

——Apple trees flowered profusely, but the period of fertilisation seemed unduly long, consequently the set was imperfect. Pears and Plums set heavy crops which have since dropped considerably. Gooseberries and Currants were both fair crops. Black Currants have been badly infested with Aphis, and in spite of spraying only bore a fair crop. Strawberries promised well but were only fair in crop and quality. The soil is red loam overlying ironstone. *George Emmett, Lydney Park Gardens.*

Herefordshire.—The Apple crop is a very light one generally, excepting Cox's Pomona which has a good crop of fine quality fruits. Pears are numerous and of good quality. Black Currants were a complete failure except in one plantation which has had constant attention, and the owner, The Hon. Michael Biddulph, has been well repaid for his extra trouble; blight ruined those which were neglected. Gooseberries were plentiful and of nice quality. Strawberries were a good average crop but of poor quality, being on the small side. Cherries have been plentiful and of fairly good quality. Plums and Damsons were both heavy crops in this district. Peaches and Nectarines, both inside and out, were an average yield. The soil is a rather stiff clay. *James B. Cook, Ledbury Park Gardens, Ledbury.*

(To be continued.)

VEGETABLE GARDEN.

MEXICAN TREE SPINACH.

The first sowing of seeds of Chenopodium amaranticolor (Caste and Reyn) failed to germinate. A second sowing made at the end of May produced a fine row of sturdy plants which were ready for picking from at the beginning of September. This plant, with its handsome dark green, triangular leaves, covered with amaranth-red powdering, suggested a border foliage plant rather than a vegetable. While being prepared for cooking it dyes the hands red, but produces an admirable, smooth, dark green Spinach of agreeable though mild flavour.

This Tree Spinach crops heavily and being drought-resisting, does best in hot and dry situations, and from the nature of the plant it cannot, of course, bolt. The seeds, which are very small, should only just be covered with soil; the first sowing failed owing to the Spinach method being followed.

Like Gombo, this Spinach is admirably suited to hot and dry countries and may confidently be recommended to explorers. *William Lawrence, Burford Lodge, Dorking.*

HOME CORRESPONDENCE.

Eradication of Garden Weeds.—How to get rid of weeds is a problem in large gardens nowadays when manual labour is so costly. Large establishments are compelled to cut down expenses to a minimum, and the consequence is discernible in many gardens where everything used to be in "Apple-pie order." I have carried out a few experiments during late years, some unsuccessful, others successful, which may interest other gardeners who are working short-handed. I had under my care a fairly extensive Rose bed that was practically covered with that obnoxious weed, Ranunculus Ficaria (Lesser Celandine). The young leaves may be delicious as a salad, but it is a heart-breaking job to rid a flower-bed of it once it obtains foothold. As an experiment I limed one half of the bed in the autumn, and this part was absolutely clean of the Celandine the following spring, whilst the remaining part was even worse than before. The same operation was extended over the whole bed, and we have not been troubled for several seasons with a single Celandine plant. The lime was bought unslaked and further experiments in other directions have proved that it is wise to use it in this form. On clayey soils Ranunculus spp. (Buttercup, etc.), are always a source of trouble, and once the weeds get a firm hold it takes years, as a rule, to eradicate them completely. They can be destroyed very quickly by using kainit at the rate of from two ounces to four ounces per square yard. I am perfectly convinced that this lowest grade of natural potash may be of infinite value to gardeners in weed-killing. I shall experiment with it on other weeds in due course. It blackened the Docks this season, but I am afraid it did not kill them, although it prevented seeding. Experienced gardeners know that it is advisable to use kainit when seeds are sown. *I. A. G., Loughton.*

Michaelmas Daisies.—I have become a pessimist with regard to novelties in Michaelmas Daisies. Blue Gem (true) which I purchased some four years also from a thoroughly reliable Gloucestershire nurseryman, has automatically, during my absence, turned into an almost exact reproduction of the lately introduced Grace Sweet. The blue variety Climax and other old favourites in the garden from which I write, where I knew every plant by name, have in the same way, automatically turned into almost exact reproductions of Beauty of Colwall and other choice varieties now being marketed under special names. No doubt Mr. Edwin Beckett will agree with me, and appreciate the humour and veracity of this note, as I have already had the honour of handling and cross-fertilising many of his best productions. *E. A. Saunders.*

SOCIETIES.

ROYAL HORTICULTURAL.

Fruit Show.

Contrary to many expectations, the Fruit Show held at Vincent Square on the 12th and 13th inst. was a great success. Notwithstanding the small crops of Apples throughout the country the competition was good in practically all the classes, while the general quality of Apples and Pears alike was of a very high order. Grapes were shown far better than at many recent exhibitions, and in most of the classes, including the large ones, competition was keen, while in the classes for ripe dessert fruit exhibits were more numerous than usual. Considerable interest was taken in the market classes and in the nurserymen's exhibits, which appeared to be fewer than usual and less extensive. No doubt the improved schedule and increased prizes helped to make the show a success. We noticed that in the single-dish classes the name of the variety was boldly printed on a card fixed just below the large class marker; this was a much appreciated innovation and improvement.

Ripe Dessert Fruit.

There were four entries in the class for a collection of nine dishes of ripe dessert fruit to include not fewer than six kinds. The first prize, a Silver-gilt Hogg Medal and £9 was won by the Duke of Newcastle (gr. Mr. S. Barker), Clumber, Worksop, with a very fine collection consisting of handsome bunches of Muscat of Alexandria and Gros Colmar Grapes, the latter carrying enormous, finely-coloured berries; Hero of Lockinge Melon, Golden Eagle and Sea Eagle Peaches, Doyenné du Comice and Pitmaston Duchess Pears, in first-rate condition, and Cox's Orange Pippin and Ellison's Orange Apples. Second prize was won by Capt. Drummond (gr. Mr. L. A. Smith), Cadland Park, Southampton, who showed heavy bunches of Black Hamburgh Grapes, large Souvenir du Congres Pears, and a fine dish of Thomas Rivers' Peach; third prize was awarded to Mrs. T. S. Hall (gr. Mr. E. Richardson), Cricket St. Thomas, Chard, whose Doyenné du Comice and Pitmaston Duchess Pears were especially good

Five competitors came forward in the class for six dishes of ripe dessert fruits in not fewer than four kinds, and here the premier award was won by Major Wingfield Digby (gr. Mr. E. Hill), Sherborne Castle, Dorset, whose set was composed of Muscat of Alexandria and Alicante Grapes, the former lacking colour; King George Melon, Durondeau Pears, Cox's Orange Pippin Apples, and Golden Eagle Peaches; the second prize went to Mrs. Hornby Lewis (gr. Mr. A. E. Friend), Danesfield, Marlow, and third prize was awarded to F. C. Stoop, Esq. (gr. Mr. G. Carpenter), West Hall, Byfleet.

Grapes.

Grapes were well shown, and the four exhibits in the class for twelve bunches in not fewer than four varieties made a great display. The Duke of Newcastle secured the premier award with fair-sized, nicely coloured clusters of Muscat of Alexandria (3); Cooper's Black, in fine condition (3); Gros Colmar, superbly-berried and coloured (3); and Mrs. Pince, well-coloured but rather small-berried (3); altogether a capital collection. Second prize was won by G. Mayer, Esq. (gr. Mr. W. Sayer), Wistler's Wood, Woldingham, whose bunches of Prince of Wales and Muscat of Alexandria were excellent, the other varieties being Alicante and Mrs. Pince, two bunches of the latter being very heavy. Sir William Lawrence, Bt. (gr. Mr. W. Everatt), Burford Lodge, Dorking, was placed third, his set including three bunches of Chasselas Napoleon. Capt. Drummond was unplaced.

Sir Arthur Evans (gr. Mr. C. L. Brown), Youlberry, Berks., was the only exhibitor of six bunches of Grapes in three varieties; this set was a poor one, excepting the bunches of Muscat of Alexandria, and only a third prize was awarded.

In the following classes two bunches of a particular variety were required:—For Black Hamburgh, curiously enough, Capt. Drummond's was the only entry; and Mr. G. Mayer's exhibit of Mrs. Pince was also a solitary effort; in each case only a second prize was awarded.

Mr. G. Tufton (gr. Mr. H. H. Brown), Castle Hill, Englefield Green, secured the first prize for Alicante, with evenly-berried, finely-coloured clusters; there were eight entries, second prize going to Capt. R. B. Brassey (gr. Mr. J. G. Quinn), Cottesbroke Hall, Northampton, and third to the Duke of Newcastle.

Madresfield Court was best shown by Capt. Brassey, the Duke of Newcastle coming second, but in neither case were the bunches of exceptional quality. Mr. G. Mayer secured first prize for Prince of Wales with heavy bunches of even shape; second, Sir William Lawrence. Mr. Mayer was also first prize winner in the class for "any other black variety," with Lady Downe's Seedling; the Duke of Newcastle, second, with Gros Colmar, and Mrs. Hornby Lewis third, with Gros Maroc.

In the Muscat of Alexandria class the first prize pair of bunches, shown by Lady Durning Lawrence (gr. Mr. J. Rutherford), King's Ride, Ascot, were perfect specimens in shape, size, berry and colour; Sir Arthur Evans came second and the Duke of Newcastle, third, in eight entries. In the "any other white" class the Duke of Newcastle led with beautifully-coloured bunches of Chasselas Napoleon; second, Mrs. T. S. Hall, with Buckland Sweetwater; and third, Sir William Lawrence, with Chasselas Napoleon.

Collections of Hardy Fruits.

The collections of hardy fruits grown entirely in the open air are invariably interesting, and this year particularly so. Of the three exhibits in the class for thirty dishes, Capt. Wingfield Digby won the first prize with a splendid set in which Rev. W. Wilks, Bramley's Seedling, Mère de Menagé, Annie Elizabeth, Warner's King, King of the Pippins, Peasgood's Nonesuch, and King of Tompkin's County Apples were particularly fine, while Doyenné du Comice, Triomphe de Vienne, Pitmaston Duchess and Beurré Alexander Lucas Pears were excellent; Sea Eagle, Gladstone, Golden Eagle, Goshawk, Lord Palmerston Peaches, and President, Rivers' Golden Gage, Coe's Golden Drop and Primate Plums were also shown in fine condition. Capt. Drummond was awarded the second prize, and his exhibit included very big specimens of Lord Derby, Eclipse, Loddington, Warner's King, Mère de Ménage, Newton Wonder and Stirling Castle Apples; the third prize was awarded to Sir Charles Nall-Cain (gr. Mr. T. Pateman), Brocket Hall, Hatfield.

The best collection of eighteen dishes of hardy fruits, out of three entries, came from Sir Charles Nall-Cain, who had a very clean set in which were excellent specimens of Peasgood's Nonesuch, Striped Beefing, Bramley's Seedling, Brabant Bellefleur and Gascoyne's Scarlet Apples, Doyenné du Comice, Beurré Bedford, Pitmaston Duchess and Durondeau Pears, Coe's Golden Drop and Late Duke Plums, and Salway Peaches. F. C. Stoop, Esq., won second prize, and Lady Haddon (gr. Mr. O. Hughes), Rossway, Berkhamstead, third.

Nurserymen's Classes.

The schedule included three classes for exhibits of hardy fruits grown by nurserymen and it was indicative of the poor fruit year to find only one exhibit in each. The largest class was for a collection arranged on thirty feet by six feet of tabling, and the exhibitors were The Barnham Nurseries, Ltd., Barnham Junction, Sussex. The fruits were solely of Apples and Pears, the former predominating. The arrangement was pleasing, a raised platform along the centre serving to break the flat effect, while the use of Cocos Palms, small Conifers and berried sprays of Berberis as foils served their purpose well. The Apples included excellent specimens of Ben's Red, Crawley Beauty, Allington Pippin, Egremont Russet, Gloria Mundi, Lane's Prince Albert, Hambling's Seedling, Royal Jubilee, Blenheim Pippin, Rival, Charles Ross and Golden Spire; and there were excellent Durondeau, Beurré Fouqueray, Conference, St. Luke and other Pears.

In the class for a collection arranged on a table space of twenty feet by six feet, Messrs. Laxton Bros., Bedford, had a very charming group, the arrangement being in excellent taste. The ground was of black velvet, and on this were laid sprays of Berberis with intensely-coloured foliage, while amongst the group were interspersed baskets of other coloured foliage and Kentia Palms. The fruits here also comprised only Apples and Pears. Of the former there were splendid dishes of Rival, James Grieve, the new Lord Lambourne, Bramley's Seedling, Charles Ross, Monarch, Laxton's Superb, King of the Pippins, Allington Pippin, Peacemaker, Rev. W. Wilks and Newton Wonder. A large number of fine Pears were displayed, such as Beurré Hardy, Roosevelt, Conference, Princess, Beurré Superfin, Marie Louise d'Uccle and Pitmaston Duchess.

The exhibitor in the smallest class, for a collection on twelve feet by six feet of tabling, was Messrs. S. Spooner and Sons, Hounslow. They showed King's Acre Pippin very finely, and other Apples of special merit were Christmas Pearmain, Newton Wonder, Lord Hindlip, Cutler Grieve, Charles Ross, Allington Pippin and Blenheim Pippin.

Market Growers' Classes.

Six classes were open to market growers but competition was not very keen. There was only one entry for six British standard boxes of Apples, three each of dessert and culinary varieties respectively. The exhibitor was Lt.-Col. H. Lumley Webb, Ham Green, Upchurch, Kent (gr. Mr. J. Holloway). The varieties were King of the Pippins and Ben's Red.

There was better competition in the class for six British standard boxes of Apples, three boxes each of two culinary varieties. The best of three exhibits was shown by Hollesley Bay Labour Colony, and the varieties were Lord Derby and Lane's Prince Albert; second, Mrs. Blofeld, Hoveton Fruit Farm, Wroxham, with Bramley's Seedling and Lord Derby.

Hollesley Bay Colony also excelled in the class for three varieties of dessert Apples packed in Peach boxes, in which four competed. They had Cox's Orange Pippin, Allington Pippin and Ribston Pippin, winning eighty-three points out of a total of one hundred. The second prize was awarded to H. J. Russell, Esq., Hatfield Peveril, Chelmsford, who was awarded seventy-nine points. His varieties were Rival, King of the Pippins and Cox's Orange Pippin; third, Gulval Experimental Farm, Penzance.

The displaying of the judge's pointing cards in this class enabled visitors to see where the exhibits scored and where they failed; thus, whilst the winning exhibit was down in quality, it scored heavily for grading and packing.

Hollesley Bay Colony had the best twenty-four fruits of Conference Pears packed in three Peach boxes; second, Lt.-Col. H. Lumley Webb.

In the similar class for Doyenné du Comice Pears packed in three Peach boxes, the two best exhibits were disqualified, in the one case because it did not conform to the schedule in respect to "count and package," in the other with respect to the size of the box. Yet, according to one of the largest growers of Peaches for market, the only Peach boxes were those used by one of the disqualified exhibitors who could not possibly get twenty-four fruits of his fine grade in the package. The use of the large box in the other case was necessary to hold twenty-four large Doyenné du Comice Pears. It was felt that the dimensions of the box should be defined in the schedule, also what constitutes a "Peach box." The first prize was awarded to C. L. Lewitt, Esq., St. Werburgh Lodge, Hoo, Kent, whose fruits were of medium size and with brown, russety skins.

The two classes for Grapes attracted only one exhibitor, Messrs. J. Almond and Son, Effingham, Surrey, and they were awarded the first prize for four chip baskets of any black variety with splendid bunches of Black Alicante, but they received no award in the class for Muscat of Alexandria.

Fruits Grown in the Open.

Amateurs' Classes.

Although there were only three exhibits of twenty-four dishes of Apples, sixteen cooking and eight dessert, they were of considerable excellence. Capt. Drummond (gr. Mr. L. A. Smith), Cadland Park, Southampton, who was first, showed very highly coloured and shapely dishes of Wealthy, Rival, Sir J. Thornycroft, King of the Pippins and Ellison's Orange amongst his shapely dessert varieties, while Stirling Castle, Peasgood's Nonesuch, Gascoyne's Scarlet and Lane's Prince Albert were his outstanding culinary sorts. Sir Charles Nall-Cain, Bt. (gr. Mr. T. Pateman), Brocket Hall, Hatfield, in his very good second prize exhibit, had excellent dishes of King of the Pippins, King of Tompkin's County and Ellison's Orange of the dessert varieties, and of Gascoyne's Scarlet, Peasgood's Nonesuch and Bramley's Seedling of the culinary varieties. F. C. Stoop, Esq. (gr. Mr. G. Carpenter), West Hall, Byfleet, was third in this important class.

Of the four exhibits of twelve dishes of Apples, eight culinary and four dessert, the best was shown by Lady Henry (gr. Mr. W. E. Hewitt), Parkwood, Henley-on-Thames. This exceedingly good exhibit included beautifully coloured dishes of Ribston Pippin, Rival, Cox's Orange Pippin and Christmas Pearmain as the dessert varieties, and Mère de Ménage, Bramley's Seedling and Lord Derby of the culinary varieties. Although the cooking Apples were smaller in the second prize exhibit of Viscount Hambledon (gr. Mr. W. Turnham), Greenlands, Henley-on-Thames, the dishes contained beautifully formed and even-sized fruits. This especially applies to the examples of Edward VII, Newton Wonder and Beauty of Kent. Ellison's Orange and William Crump of the dessert varieties were admirable. W. J. H. Whittall, Esq. (gr. Mr. J. M. Grant), Haslemere, Surrey, was third.

The class for six dishes of cooking Apples brought five exceedingly good exhibits of large, shapely and clean fruits. J. H. Loudon, Esq. (gr. Mr. J. Bond), Olantigh Towers, Wye, Kent, was first with magnificent dishes of Bramley's Seedling, Bismarck, Warner's King Loddington Lord Derby and Rev. W. Wilks. J. A. Stedston, Esq., Bishops Teignton, Teignmouth, was second, and he had good dishes of Crimson Bramley, Byford Wonder and Warner's King. The Earl of Bessborough (gr. Mr. T. E. Tomalin), Piltown, Co. Kilkenny, Ireland, who was third, had a very highly coloured dish of Hoary Morning.

The six exhibits of a similar number of dishes of dessert Apples made a brilliant display of colour, for nearly all the fruits were excellent in this respect as well as being of ideal shape and size. J. A. Stidston, Esq., was first, with admirable dishes of Ribston Pippin, Lord Hindlip, King of Tompkins County, Madresfield Court, Wealthy and King of the Pippins. The second prize was won by W. H. Myers, Esq. (gr. Mr. G. Ellwood), Swanmore House, Hants, with a very good exhibit, which included Cox's Orange, Ben's Red and Coronation. The Earl of Bessborough, who was a good third in this strong class, had a beautiful dish of Wealthy.

The large class requiring eighteen dishes of dessert Pears had five exhibits of very good fruits. Capt. Drummond repeated his success in the large Apple class by winning the first prize with a superb exhibit. His ripe varieties were Margaret Marillat, Durondeau, Souvenir du Congres, Beurré Superfin and Doyenné Boussoch. He also had nearly perfect fruits of Beurré Alexander Lucas, Conference and Pitmaston Duchess. Major Wingfield Digby (gr. Mr. E. Hill), Sherborne Castle, Dorset, was second, and he had very good dishes of Durondeau, Pitmaston Duchess, Doyenné du Comice and Beurré Alexander Lucas. Lady Knott (gr. Mr. W. E. Anderson), Close House, Wylam-on-Tyne, was third in this excellent class.

Competition was not nearly so good in the class for nine dishes of dessert Pears, of which there were only two exhibits. The first prize was won by J. A. Stidston, Esq., with very good dishes of Margaret Marillat, Beurré Alexander Lucas and Roosevelt. F. C. Stoop, Esq., in his second prize collection, had good dishes of Pitmaston Duchess and Doyenné du Comice.

Cooking Pears were better represented, for there were eleven exhibits of three dishes. Mrs. Helsham Jones (gr. Mr. F. Lock), Woolton Hill, Newbury, was first, showing Gilogil, Uvedale's St. Germain and Catillac.Sir Charles Nall-Cain, Bt., was a close second.

There were only four dishes of Peaches. Capt. Drummond was first with six excellent fruits of Salway, while Mrs. Austin (gr. Mr. E. G. Longhurst), Totteridge, was second with the Nectarine Peach.

Plums were well represented by eight exhibits of three dishes. Capt. Drummond added further to his successes by winning the first prize with splendid dishes of Coe's Golden Drop, Primate and President. Mrs. Hornby Lewis (gr. Mr. A. E. Friend), Danesfield, Marlow, was second with good dishes of Reine Claude de Bavay, Monarch and Coe's Golden Drop. J. H. Loudon, Esq., was the only exhibitor of Damsons or Bullaces, and was awarded the first prize for good dishes of Bramley's King and Merryweather Damsons, and Langley Black Bullace.

The only dish of Morello Cherries was very poor and was rightly passed over by the judges. Mrs. Hornby Lewis was first and Mrs. Helsham Jones was second with good dishes of Autumn Raspberries.

Four dishes of Figs were staged, and the prizes were awarded to the Duke of Newcastle and J. H. Loudon, Esq. (gr. Mr. J. Bond), Olantigh Towers, Wye, in this order.

District Classes.

The following classes were for competition amongst amateurs in the various specified county districts. For each district there were classes for six dishes each of Apples (four cooking and two dessert) and of Pears.

In the Kent, Surrey, Sussex and Hants. class, J. H. Loudon, Esq., was first with Pears, of which he had good dishes of Durondeau and St. Luke; and the Earl of Bessborough was second. W. H. Myers, Esq., won the first prize with splendid Apples, including Ribston Pippin, Mère de Menage and Bramley's Seedling, of especially good quality. The second prize was won by F. J. Long, Esq., The Moorings, Belmont, Surrey.

There were not so many exhibits in the Wilts., Dorset, Somerset, Devon and Cornwall section, though Lady Mary Morrison (gr. Mr. W. H, Nulls), Tisbury, Wilts., the only exhibitor of Pears, had very good fruits of Marguerite Marillat. J. A. Stidston, Esq., the first prize winner with Apples, had a superb collection, which included Cox's Orange and Ellison's Orange, of high colour; and Peasgood's Nonesuch, of large size. Lady Mary Morrison was second.

The Gloucester, Oxford, Bucks., Berks., Beds., Herts. and Middlesex class was particularly good in all respects. Mrs. Austin, showing Doyenné Boussoch and Beurré Superfin, of fine appearance, was first with Pears, and Mr. R. Staward, Ware Park Gardens, Ware, was second. In the Apple class, Capt. G. Chalmers-Hunt (gr. Mr. W. J. Wright), Gamels Hall, Hertford, was first, and he had beautiful fruits of Rival and Allington Pippin; while Mrs. Hornby Lewis had an excellent dish of Charles Ross in her second prize exhibit.

In the Essex, Suffolk, Norfolk, Cambridge, Hunts. and Rutland section, E. H. Sikes, Esq. (gr. Mr. G. Diggens), Fyenning Grange, Ingatestone, Essex, won both first prizes. He was alone with Pears, and S. H. Goodwin, Esq., was second with Apples.

The exhibits from the Lincoln, Northampton, Warwick, Leicester, Notts., Derby, Staffs., Shropshire and Cheshire division were more numerous and of much better quality. Capt. R. B. Brassey (gr. Mr. J. G. Quinn), Cottesbrooke Hall, Northampton, was first with an excellent collection of Pears, including Triomphe de Vienne, Conference and Pitmaston Duchess. Mark Firth, Esq. (gr. Mr. R. W. Thatcher), Carlton Park, Market Harborough, was second. Major Bibby (gr. Mr. J. Clark), Sansaw, Shrewsbury, won the first prize with splendid Apples, of which Rival, William Crump, Charles Eyre, Bismarck and Bramley's Seedling were the very best. Mark Firth, Esq., was second.

Although not so numerous, the quality was equally high in the exhibit from the Worcester, Hereford, Monmouth and Wales division. The Earl of Coventry (gr. Mr. W. H. Wilson), Croome Court, Severn Stoke, Worcester, had superb fruits of Pitmaston Duchess, Doyenné Boussoch Pears, and of Mère de Ménage, Warner's King, King of the Pippins and Charles Ross Apples, and deservedly received both first prizes.

Lady Knott, who showed a particularly good collection of Apples, was the only exhibitor from the six northern counties, and was awarded the first prize. Her exhibit included Charles Ross and Gascoyne's Scarlet, of very high colour.

Major C. L. Gordon (gr. Mr. J. Duff), Threave House, Castle Douglas, who had an excellent exhibit of Apples, was the only Scottish exhibitor, His very best varieties were Worcester Pearmain, Lady Sudeley, Warner's King and Castle Major.

Ireland was much better represented. The Earl of Bessborough won both first prizes with superb fruits. His Apples included Beauty of Kent, Rival and Bramley's Seedling, and his best Pears were Fondante de Thirriott and Pitmaston Duchess. The Earl of Dunraven (gr. Mr. E. S. Goff), Carrick-on-Luir, was a good second, with Apples, and T. Sherrard, Esq., (gr. Mr. J. J. Lynnott), Maryborough, Douglas, Cork, was second with Pears.

Single Dish Classes: Apples.

In most of the classes for five fruits each of specified varieties of Apples and Pears the quality and competition were very good. The dessert Apples were noteworthy for their moderate and even size, and often for brilliant colouring. Allington Pippin, with seventeen dishes, was the most popular variety. Adam's Pearmain, with twelve, came next, and was closely followed by Ribston Pippin and Rival with one dish each fewer, and by Charles Ross with ten dishes. There was no exhibit of St. Cecilia and the two dishes of James Grieve and St. Everard were so indifferent that only the second prizes were awarded.

J. A. Stidston, Esq. was a very successful exhibitor in these dessert Apple classes. He was first for Adam's Pearmain and American Mother, with splendidly coloured fruits; for Blenheim Orange, Claygate Pearmain, of which three dishes were shown; with Ellison's Orange and Gascoyne's Scarlet, of both these there were nine very good dishes often of brilliant colouring; for King's Acre Pippin, Orleans Reinette and Rival. His fruits of the last named were especially good. He was also first in the variable class for Cox's Orange Pippin with good examples.

F. J. Long, Esq., was the most successfel in the very large class for Allington Pippin and his fruits were of ideal appearance. The best of the ten dishes of Charles Ross, of lovely colouring, was shown by G. Excel, Esq., Bembridge, Isle of Wight. Mark Firth, Esq., was first with Egremont Russet, of which there were five dishes. Capt. R. B. Brassey had the better of two dishes of Superb, and Sir William Lawrence, Bart., was similarly successful with Margil. H. W. Henderson, Esq., had the best of eight dishes of Sturmer Pippin, and R. J. Corbett, Esq., was first in the class of five dishes of William Crump.

Nineteen exhibitors competed with dishes of eight fruits of an early dessert variety not named above. F. C. Stoop, Esq., was first with St. Edmund's Pippin and J. A. Stidston, Esq., was placed second with Coronation. The best late "any Other Variety" Dessert Apple was Belle de Boskoop, shown by W. H. Myers, Esq.; Lord Hindlip shown by R. Learmont, Esq., Warkton, Kettering, was the second best. There were twenty-six exhibits.

Cooking Apples were fully as numerous and as well shown. The most popular variety was Bramley's Seedling with seventeen dishes, followed by Lord Derby with fifteen dishes. In this division J. A. Stidston, Esq., was again a successful exhibitor. He won first prizes for Blenheim Pippin, Monarch, Peasgood's Nonesuch, of very light colour; Queen, amongst eight competitors; Rev. W. Wilks, of especially good quality, and S. T. Wright, of which there were two dishes. Annie Elizabeth was shown seven times and the best was by C. R. Dunkley, Esq.

A. C. Barnett, Esq., Lane End, High Wycombe, was first with good specimens in the large class for Bramley's Seedling. T. Sherrard, Esq., had the best of nine very good dishes of Bismarck. F. C. Stoop, Esq., was first with Dumelow's Seedling, and of the eight exhibitors of very good dishes of Edward VII. The Earl of Bessborough was first for Ecklinville, Grenadier, Lord Derby, of which there were fifteen especially good dishes, and of the nine handsome dishes of Warner's King.

Sir Charles Nall-Cain, Bart., was first with Crawley Beauty, Encore and Golden Noble, with good, typical fruits. The best of eight dishes of Golden Spire was shown by N. W. Tighe, Esq., Rathsend, Co. Wicklow, and he was also first amongst twelve exhibitors of Lane's Prince Albert. Lady Henry had the best of eleven dishes of Newton Wonder. J. H. Loudon, Esq., was first with Norfolk Beauty.

There were sixteen dishes of any other variety of cooking Apple and the first prize was won by the Earl of Bessborough with Loddington; J. A. Stidston, Esq., second with Charles Eyre.

The best flavoured Apple not mentioned in the single dish classes was St. Everard, shown by J. H. Loudon, Esq., while Beauty of Kent, shown by W. H. Myers, Esq., was second.

Single Dish Classes: Pears.

Pears were shown especially well. That best of all varieties, Doyenné du Comice, was shown by seventeen exhibitors; there were thirteen of Pitmaston Duchess and ten each of Conference and Josephine de Malines. The Duke of Newcastle was first with Doyenné du Comice, Louise Bonne of Jersey, where there were nine dishes, and with Pitmaston Duchess, all of particularly good quality. H. W. Henderson, Esq., had the best Easter Beurré and Beurré Bosc. Major Wingfield Digby was first with Beurré d' Anjou. J. A. Stidston, Esq., had the best of seven dishes of Beurré Hardy and of eight Durondeau. J. H. Loudon, Esq., showed superb fruits of Beurré Superfin, Conference and Marguerite Marillat and won the first prizes with excellent fruits.

The best of five dishes of Emile d'Heyst was shown by Rev. Roland Smith (gr. Mr. H. Bates), The Park, Huntingfordbury, Herts. Mrs. H. Jones was first with Fondante d' Automne, amongst ten exhibitors of Josephine de Malines and with Thomson's. Captain Drummond had the best Glou Morceau. Captain R. B. Brassey was first of six very good dishes of Marie Louise, and Captain H. B. Tate (gr. Mr. A. E. Moss), Billesley Manor, Alcester, was first of seven exhibitors of Winter Nelis.

There were fourteen dishes of any other early variety and the best was of Triomphe de Vienne, shown by Viscount Hambledon, and Mark Firth, Esq., was second with the same variety. Santa Claus, shown by Lady Knott, was, similarly, the best late variety. Beurré Baltet Pére, shown by Capt. Drummond, was the second best. Comte de Lamy, shown by Mrs. Hornby Lewis, was the best flavoured Pear not named in the above classes, and Old Seckle, shown by Major Wingfield Digdy, was the second best.

Affiliated Societies' Class.

The Affiliated Societies' Challenge Cup induced only two Societies to send collections, but the Cup was won by the North Walsham and District Horticultural Society (Secretary Mr. H. W. T. Empson), with a magnificent collection of eighteen dishes of Apples and Pears. Their Pears included Pitmaston Duchess, Charles Ernest and Beurré Alexander Lucas. The chief of the Apples were Bramley's Seedling, Royal Jubilee, Lord Derby, Newton Wonder, Charles Ross, Allington Pippin and Ribston Pippin. The second prize was awarded to the Compton and Shawford Society, near Winchester (Secretary Miss F. B. Stallard).

Fruit and Vegetable Committee.

Present: Mr. C. G. A. Nix, Mr. J. Cheal, Mr. S. A. Rivers, Mr. P. C. M. Veitch, Mr. G. F. Tinley, Mr. A. C. Smith, Mr. E. Laxton, Mr. J. Wilson, Mr. H. Smith, Mr. T. Pateman, Mr. G. Woodward, Mr. E. Beckett, Mr. G. Kelf, Mr. E. Neal, Mr. J. Basham Mr. J. C. Allgrove, Mr. W. H. Divers, Mr. Fred. G. Tresider, Mr. Chas. Pearson, Mr. A. N. Rawes, Mr. A. Bullock, Mr. F. Jordan, Mr. J. G. Weston, Mr. Ed. Harriss, Mr. W. Poupart, Mr. W. F. Giles, Mr. C. H. Cook, Mr. H. Markham and Mr. A. W. Metcalfe.

The most successful competition for the Bunyard Cup resulted on this occasion, for of five entries three were of sufficent merit as to be worth consideration again. An unnamed seedling, shown by Mr. R. Fairman, Black Corner, Crawley, was promising, although not nearly ripe and another late variety named Triumph, shown by Messrs. Laxton Bros. was commented on favourably; the senders of both of these sorts were requested to submit fruits again later this year. The best variety, however, was Imperial (Laxton), which was adjudged worthy of being submitted again next year without further reservation. Imperial is a fine Apple with much of the Cox's Orange Pippin flavour and of similar size to that variety. The top, however, is flat, as in Fearn's Pippin, and the eye is very wide.

Pear Beurré Bedford, a variety raised from Durondeau crossed with Marie Louise, was submitted for award by the raisers, Messrs. Laxton Bros., but, although of good quality, it was not considered superior to others already in cultivation. Messrs. Laxton Bros. also showed a new Prune raised from Prune crossed with Victoria Plum.

Mr. P. C. M. Veitch showed from his Exeter Nursery fruits and cut sprays of Mr. George Paul's variety of the purple-leaved Peach. The tree is said to be very hardy and makes a most beautiful picture in the garden whilst the fruit is of very fair flavour; its skin is deep red and the colour extends a little into the flesh. This variety is an acquisition in gardens, both for its foliage and fruits.

Non-Competitive Exhibits.

Mr. J. C. Allgrove showed pot fruit trees and baskets of choice Pears, Apples, Plums and Nuts. The trees included a specimen of Plum President with the branches laden with ripe fruits, and another outstanding tree was of Apple Gascoyne's Scarlet Seedling. Well fruited trees of Figs, Pears and Damsons were also displayed. The gathered fruits represented an assortment of choice Plums, Apples and Pears, all of the highest exhibition quality.

Messrs. Geo. Bunyard and Co., Ltd., showed a general collection of hardy fruits on a table covered with matting. The fruits were in mahogany coloured baskets, and the exhibit was made further attractive by a few Ferns and Palms. There were Apples, Pears, Plums, Medlars, Nuts and Grapes.

Mr. H. Hemsley had some remarkably fine Apples in an exhibit of merit; the specimens of Mère de Ménage were of exceptional size and highly coloured, one fruit weighed 1 lb. 15 ozs. Berried sprays and Autumn tinted foliage harmonized well with the Apples and Pears. Messrs. T. Rivers and Son had Orchard-house fruits which were the largest and most highly coloured in the show. Gascoyne's Scarlet Seedling, Emperor Alexander, James Grieve, Peasgood's Nonesuch, and Rival were shown in the highest perfection. A few trees in pots made a suitable background.

Studley College had many varieties of Pears, such as Doyenné du Comice, Josephine de Malines, Santa Claus, Duchesse d'Angouleme, and Bellissimer d'Hiver tastefully arranged in oval baskets and set off by Phoenix Roebelinii and Grevillea robusta.

Messrs. J. Cheal and Sons, Crawley, displayed hardy fruits, principally Apples and Pears. The group was well staged with a few Palms and Ferns for relief. The Apples, such as Allington Pippin, Encore, Bismark, Crawley Beauty, Ellison's Orange, and Sandringham were of first quality, and amongst the Pears were some choice fruits of Doyenné du Comice and Conference.

Messrs. W. Hopwood and Son, Cheltenham Spa, made a pleasing display of hardy fruits and Grapes relieved with autumn foliage and berried shrubs. The Earl of Dunraven, Castletown, Ireland (gr. Mr. E, S. Goff), exhibited ornamental Gourds, Crabs and Medlars. Mr. J. H. Whittall, Grayswood Hill, Haslemere, showed 112 named varieties of Apples.

NORTH OF ENGLAND HORTICULTURAL.

The autumn show of the North of England Horticultural Society was held in the Winter Gardens, Harrogate, on the 15th ult. The Secretary, the Rev. J. Bernard Hall, informs us that the show was the best ever held under the auspices of the Society and that the receipts at the gate constituted a record.

The offer of the Harrogate Corporation to lease a portion of land for trial grounds was considered by the Committee, and the site approved as suitable. A sub-Committee was appointed to consider the matter further.

In the competitive classes for fruits, prominent first prize winners were Mr. J. E. Hathaway, Baldersby Park Gardens, Thirsk; the Rt. Hon. the Earl of Feversham (gr. Mr. D. Williams), Duncombe Park, Helmsley; Mr. H. Metcalfe, Crimple Junction; and Mr. G. Knight, Scriven Gardens, Knaresborough.

The various Challenge Cups were awarded as follows: the Harrogate Corporation Challenge Cup to Messrs. G. Gibson and Co., Bedale, for a group of herbaceous plants; the Ogden Challenge Cup to Messrs. Dickson and Robinson, Manchester, for Dahlias; the Whitehead Challenge Cup to Messrs. Dobbie and Co., Edinburgh, for Dahlias; the Lady Kathleen Pilkington Challenge Cup to Messrs. Alex. Dickson and Sons, Newtownards, for Roses; the Webster Challenge Cup to Mr. J. E. Hathaway, Baldersby Park Gardens, Thirsk, for the best collection of fruit in the show; and the Penrose-Green Challenge Cup to Mr. H. Metcalfe, Crimple Junction, Harrogate, for the best exhibit of fruit from an amateur's garden.

The following Medals were also awarded:

Large Gold Medals.—To Messrs. G. Gibson and Co., Bedale, Yorks, for herbaceous flowers; to Messrs. Dickson and Robinson, Manchester, for Dahlias; to Messrs. Alex. Dickson and Sons, Ltd., Hawlmark, Newtownards, Co. Down, for Roses.

Gold Medals.—To Messrs. Sutton and Sons, Reading, for vegetables; to Mr. C. Gregory, Old Close Nurseries, Chilwell, for Roses; to Mr. Alva J. Hall, Victoria Nurseries, Harrogate, for alpines; to Messrs. Dobbie and Co., Ltd., Edinburgh, for Dahlias; to Messrs. W. and J. Brown, Rose Nurseries, Eastfield, Peterborough, for Roses; to Mr. W. Wells, Junr., Merstham, Surrey, for herbaceous flowers; to Mr. Thomas Robinson, Porchester Nurseries, Nottingham, for Roses; to Messrs. Kent and Brydon, Ltd., Darlington, for herbaceous flowers; to Messrs. John Peed and Son, West Norwood, London, for a miscellaneous exhibit; and to Messrs. Mansell and Hatcher, Rawdon Leeds, for Orchids.

Large Silver-Gilt Medals.—To Messrs. R. H. Bath, Ltd., The Floral Farms, Wisbech, for Gladioli; and to Messrs. Pennell and Sons, Lincoln, for fruit.

Silver-Gilt Medals.—To Messrs. Isaac House and Sons, Westbury-on-Trym, Bristol, for Scabious and Tritomas; to Messrs. Allwood Bros., Wivelsfield Nurseries, Hayward's Heath, for Carnations; to Messrs. Backhouse Nurseries (York), Ltd., for alpines; to Messrs. Baker's, Codsall, near Wolverhampton, for herbaceous flowers.

Large Silver Medals.—To Messrs. C. Engelmann, Ltd., Saffron Walden, for Carnations;

and to Messrs. Hewitt and Co., Ltd., Solihull, Birmingham, for Delphiniums.

Silver Medals.—To Messrs. Maxwell and Beale, Broadstone, Dorset, for table rock garden; to Mr. R. C. Widnall, 3, Wedderburn Road, Woodlands, Harrogate, for Chrysanthemums; to Mr. A. W. Whitelock, Wetherby Lane, Harrogate, for Chrysanthemums; to Mr. S. Gardner, Wharfedale Nurseries, Pool, near Leeds, for a miscellaneous group; to Mr. J. Mallender, Scrooby, Doncaster, for Tritomas, etc.; to Messrs. A. Greenwood and Co., The Nurseries, York Road, Wetherby, for a rock garden; to Messrs. Wood and Ingram, The "Old" Nurseries, Huntingdon, for Roses; to Messrs. Whittaker and Wilson, Linton, Collingham Bridge, near Leeds, for Gladioli and Chrysanthemums; to Messrs. W. H. Simpson and Sons, Monument Road, Birmingham, for Gladioli, etc.; to Mr. P. Gardner, Craven Nurseries, Addingham, Ilkely, for herbaceous flowers; to Mr. R. V. Roger, Pickering, for alpines; to Mr. Wm. Sydenham, Melbourne, Derby, for a miscellaneous group; and Mr. to E. J. Parsons, Worcester, for fruit.

HAARLEM BULB GROWERS.

The Gladiolus Committee of this Dutch Society has made the following awards to Gladioli during its sessions July and August, 1926.

First-Class Certificates.

Gladiolus Mrs. van Konijnenburg: the flowers are china-blue, dark-veined, with a coloured centre; *G. Pfitzer's Triumph*, very large red flowers with carmine centre, neatly ranged on very long, stout stems; *G. Phaenomen*, a bright soft pink variety with clear yellow markings; the falls are uncommonly stout. These three were sent by Mr. W. Pfitzer. *G. Yvonne*, the flowers are white with a pink shade and marked with a small carmine spot, pink, with a carmine spot on the fall; sent by Messrs. P. Byvoet and Co., Overveen. *G. Salvator Rosa*, colour soft strawberry-pink with a carmine spot on the fall; sent by Messrs. P. Byvoet and Co., Overveen. *G. Troubadour*, a fine purple variety; sent by Mr. W. Pfitzer. *G. Yellow Perfection*, coloured soft butter-yellow with a spot of primrose-yellow; sent by Mr. W. Pfitzer. *Gladiolus Seedling No.* 27, a glistening scarlet variety, coloured carmine in the centre. *G. nanus hybrida Bartigon*, a cross between Gladiolus primulinus and Gladiolus nanus, with the habit of the latter, colour salmon-red with a scarlet spot; sent by Messrs, Stoutenbeek van Til., Ltd., Hillegom. *G. primulinus Krelage's Favourite*, the flower is scarlet-red with a violet shade and a small scarlet stripe on the fall; sent by Messrs. E. H. Krelage and Son, Haarlem. *G. primulinus Red Letter Day*, a scarlet-red variety; sent by Messrs. E. H. Krelage and Son, Haarlem.

Awards of Merit.

Gladiolus Abricot, the colour is warm yellow with apricot glow and a carmine stripe on the falls; spike slender; sent by Messrs. P. Byvoet and Co., Overveen. *G. Albatross*, has flowers that are white with a violet glow and purple stamens, somewhat carmine-coloured in the centre; sent by Mr. W. Pfitzer. *G. Andenken an Wilhelm Pfitzer*, flowers of purest white with a small carmine stripe in the centre, stamens almost white; shown by Mr. W. Pfitzer. *G. Bleriot*, a crimson-pink variety with a violet shade, orange-red spot and a carmine stripe. *G. Blue Bell*, china-blue colour; the falls have a dark violet spot with a white centre, the spot being very prominent. *G. Coryphee*, a soft pink variety with white centre and white blotch. These two last wree sent by Mr. W. Pfitzer. *G. Emma*, a shade of salmon-pink with carmine spots. *G. Frau Gertrud Pfitzer*, a soft china-blue variety with a violet centre. *G. Heliosa*, a lemon-yellow variety with gold spot, somewhat undulated, big flowers. *G. Jhr. G. F. van Tets*, flowers very large and pure white. *G. Minerva*, paper-white, well-filled flowers on a compact spike. These last four were sent by Mr. W. Pfitzer. *G. Mrs. F. C. Peters*, a violet variety with a purple spot. *G. Mrs. Henry McClaren*, of rich butter-yellow colour with falls of a somewhat darker yellow; sent by Mr. Herbert Robinson, Leicester. *G. Nancy*, a soft salmon-orange variety with a red stripe. *G. Oranje-Nassau*, flowers medium-size of orange-scarlet with a dark carmine-red spot; sent by Mr. P. J. v. d. Ploeg, Heemskerk. *G. Perle Brilliante*, a silvery-purple variety with violet stripes and reddish-purple spot; sent by Mr. C. P. Alkemade, Noordwijk. *G. Pour le Merite*, flowers creamy-white, shaded, with a small carmine stripe in the centre, stamens almost white; sent by Mr. W. Pfitzer. *G. Princess Juliana*, a salmon-orange variety with white spot in the centre. *G. Roodkapje*, flowers orange-scarlet with a purple spot and purple centre; sent by Mr. W. Pfitzer. *G. Rosary*, colour soft strawberry-

Obituary.

Alex. Cormick.—Mr. Alexander Cormick who passed away at Woodbank, Glenluce, on September 14, in his eighty-second year, was for a long number of years gardener at Balkail Gardens, Glenluce, the residence of the Earl of Stair. Mr. Cormick was a native of Fochabers and served his apprenticeship in the gardens at Gordon Castle. In 1868 he became gardener at Genoch, to Mr. M'Neil-Caird, and in 1871 he returned to take charge of the gardens at Balkail, where he remained as head gardener for fifty years, retiring only some four years ago. When in the prime of life Mr. Cormick was an extensive and successful exhibitor of all kinds of garden produce, and during the course of years accumulated quite a large number of cups and other trophies which he had won. He was a staunch churchman, an ardent total abstainer, a keen bowler and an enthusiastic angler. His wife predeceased him by four years; one son and two daughters remain to mourn the loss of this fine old gardener.

T. W. Sanders.—It is with very deep regret that we learn just as we are going to press of the death of Mr. T. W. Sanders, F.L.S., for about forty years editor of *Amateur Gardening*. We understand that he was taken ill on Friday, October 8, and hopes were entertained for his recovery, but double pneumonia supervened and he passed away on Wednesday, October 13.

TRADE NOTES.

Mr. John Forbes, only son of Mr. and Mrs. Archibald Forbes, Buccleuch Nurseries, Hawick, was married to Miss Lizzie Addison, daughter of Mr. John M'Ewan, Dunfermline, and the late Mrs. M'Ewan, on the 5th inst. The nursery staff was entertained in honour of the occasion and given a half-holiday.

Mr. E. B. Walker, of Pinewoods, Camberley, tells us of some ferro-gravel almost unique in composition which he has found on his land. Analysts who have tested it have stated that it is absolutely without clay, a vary rare quality; also, having iron as the binding property, it is excellent for concrete purposes, as the iron strengthens the cement, instead of, like clay, tending to disintegrate it. Mr. Walker is fortunate in having about sixteen acres of the land in which this gravel is to be found to a depth of fifteen feet.

SCHEDULES RECEIVED.

Croydon Chrysanthemum Society.—Thirty-fourth annual show to be held on November 9 and 10 at the Central Baths Hall. Secretary, Mr. T. Aley, The Firs, Highbarrow Road, Addiscombe.

Henfield Chrysanthemum Society.—Thirty-seventh annual show to be held on Thursday, November 4, at the Assembly Rooms. Secretary, Mr. J. M. Musson, Ivy Cottage, Henfield.

ANSWERS TO CORRESPONDENTS.

Alpine Plants for Rockery Bank Facing North.—*H. R. D.* A selection from the plants noted below will thrive well on a north aspect in ordinary gritty soil, with the exception of those marked P, which always do better with a little peat or leaf-mould added. If the bank receives a little sunshine, a few Aubrietias, alpine Phloxes, Alyssums, etc., could be planted on the margin with good results; whilst if the bank covers a large expanse of ground, then a few hardy Ferns, Aquilegias and Funkias placed here and there with one or two small and slow-growing growing Conifers will make the whole much more interesting and give the bank a "clothed" appearance during the dull winter months. In addition to Conifers, a few Andromedas, Azalea amoena and such Cotoneasters as C. horizontalis, C. adpressa, C. microphylla and C. pyrenaica, Genistas, Kalmias and the alpine Rhododendrons may be used. In arranging the plants attention should be paid to blending the colours, so that they will not clash. Do not plant all the evergreen-foliaged kinds together, nor the deciduous ones, but take care to interplant them, *i.e.*, plant a group of three or six plants with evergreen foliage together, and then three or four groups of different deciduous plants, before planting more of the evergreen types. List of suitable subjects: The alpine Anemones, such as A. apennina, A. nemorosa, etc., Acaenas, rather rampant, must be kept in bounds if planted, as also must the Ajugas and Asperula odorata; Arenaria balearica, for clothing faces of the rock, as once planted it makes sheets of verdant green, with myriads of white flowers; Asarum europaeum, Cornus canadensis (P), Campanulas, such as C. muralis, C. carpatica and C. rotundifolia; Cortusa Matthiola (P), hardy Cyclamens, hardy Cypripediums, such as C. acaule, C. spectabile and C. Calceolus (P), Eomecon chionanthe, Epimediums, Epigaea repens (P), Euphorbias in variety, Galax aphylla (P), Gaultheria procumbens (P), Geraniums in variety, prostrate Gypsophilas, Haberlea rhodopensis, Shortias and Ramondias (give peat and plant so that their foliage does not collect snow and rain), Hepaticas in variety, Herniaria glabra, Horminum pyrenaicum, Hypericums (small-growing kinds), Lithospermum prostratum, Linnaea borealis (P), Lysimachia Henryi, Meconopsis in variety, Omphalodes verna, Polygonums (dwarf sorts), Primulas, quite a host of kinds to choose from in the japonica and pulverulenta sections; P. rosea, Pulmonarias, Saponaria ocymoides, Saxifragas, Sedum spurium vars. etc., Tiarellas, Trilliums (P), Veronica prostrata and Waldsteinia trifolia.

Beech Growths Dying.—*J. S.* There is no injurious fungous in the Beech shoots received for examination, but the appearance of the shoots suggests that there may be something wrong with the roots of the tree. The latter may have been injured at some time by excessive wet or excessive drought. It would be wise to uncover some of the roots and examine them: also examine the base of the tree and find out whether the section between roots and trunk is healthy. If you find that the roots or trunk are in a bad condition, little can be done to save the tree, but if these parts appear to be healthy a surface dressing of well-decayed manure may assist the tree to recover.

Roses for Growing in Pots.—*G. W. G.* The best long-stemmed Roses, such as are grown in quantity for the market, include Madame Butterfly, Ophelia, Golden Ophelia, Sunburst, Lady Hillingdon, Mrs. Henry Stevens, Liberty, Hadley, Richmond, Columbia, and Madame Abel Chatenay.

Communications Received.—J. F.—W. H.—C. I.—A.T.—P. B.—J. P.—J. S.—F. S.—J. B.—M. A. A.—T. W. B.—F. W. G.—F. J.—D. W.—R. E.—W. R. B.—W. C. B.—H. M.—A. B. C.—J. C. J.

MARKETS.

COVENT GARDEN, Tuesday, October 12th, 1926.

Plants in Pots, etc.: Average Wholesale Prices.

(All 48's except where otherwise stated).

	s. d. s. d.
Adiantum cuneatum per doz.	10 0-12 0
—elegans	12 0-15 0
Aralia Sieboldii	9 0-10 0
Araucarias, per doz.	30 0 42 0
Asparagus plumosus	12 0-18 0
—Sprengeri	12 0-18 0
Aspidistra, green	36 0-60 0
Asplenium, doz.	12 0-18 0
—32's	24 0-30 0
—nidus	12 0-15 0
Cacti, per tray —12's, 15's	5 0- 7 0
Celosias, 48's, per doz.	9 0-10 0
Chrysanthemums, in variety, 48's, per doz.	15 0-21 0
Crotons, doz.	30 0-45 0
Cyrtomium	10 0-25 0
Erica gracilis, 48's, per doz.	24 0-36 0
— 60's, per doz.	9 0-12 0

	s. d. s. d.
Erica nivalis, 48's per doz.	24 0-36 0
—60's „	12 0-15 0
—72's „	8 0—9 0
Hydrangeas, white, 48's, per doz.	24 0-70 0
Lilium longiflorum (Harrisii) 48's, 32's per doz.	30 0-42 0
Lilium speciosum rubrum, 32's. 48's each	2 6—3 6
— —album, 32's, 48's each	2 6—3 6
Nephrolepis in variety	12 0-18 0
—32's	24 0-36 0
Palms, Kentia	30 0-48 0
—60's	15 0-18 0
Pteris, in variety	10 0-15 0
—large, 60's	5 0 6 0
—small	4 0- 5 0
—72's, per tray of 15's	2 6- 3 0

Cut Flowers, etc.: Average Wholesale Prices.

	s. d. s. d.
Adiantum decorum, doz. bun.	8 0-10 0
cuneatum, per doz. bun.	8 0-10 0
Asparagus plumosus per bun., long trails, 6's	2 6—3 6
med. sprays	1 6—2 6
short	0 9—1 3
—Sprengeri, bun. long sprays	1 6—2 0
med. „	1 0—1 6
short „	0 4—1 0
Asters, white per doz. bun.	5 0—8 0
—coloured, per doz. bun.	4 0—6 0
Bouvardia, white per doz. bun.	12 0-15 0
Carnations, per doz. blooms	2 0—4 6
Chrysanthemums, white, per doz.	2 0—6 0
—bronze	1 6—2 6
—white, per doz. bun.	10 0-15 0
—bronze, per doz. bun.	6 0-12 0
—yellow, per doz. blooms	2 6—5 0
—yellow, per doz. bun.	8 0-10 0
—pink, per doz. blooms	2 0—6 0
—pink, per doz. bun.	9 0-10 0
—specimens, per doz. blooms	8 0-12 0
Cornflower, blue, per doz. bun.	2 6 3 0
Croton leaves, per doz.	1 9—2 6
Fern, French, per doz. bun.	10 0-12 0
Forget-me-not, per doz. bun.	10 0-12 0
French Flowers—	
—Acacia (Mimosa), per doz. bun.	12 0-15 0
—Eucalyptus, per pad	7 0—8 0
—Ruscus, green, per pad	9 0-10 0
—Myrtle, green, per doz. bun.	1 6—2 0
Gardenias, 12's, 18's per box	4 0—6 0
Gladiolus—	
—Giant varieties, scarlet, per doz. spikes	2 6—3 0
Gloriosa, per doz. blooms	5 0—6 0

	s. d. s. d.
Heather, white, per doz. bun.	6 0—9 0
—pink, per doz. bun.	6 0—8 0
Honesty, per doz. bun.	15 0-18 0
Lapageria, white, per doz. blooms	2 6—3 6
Lilium auratum, per doz. blooms	9 0-10 0
—longiflorum long, per doz.	3 0—3 6
Lilium speciosum rubrum, long, per doz. blooms	3 6—4 0
— short, doz. blooms	2 0—2 6
—lancifolium album, per doz. blooms, long	3 6—4 6
Lily-of-the-Valley, per doz. bun.	18 0-30 0
Michaelmas Daisies, per doz. bun.	3 0—6 0
Orchids, per doz.	
—Cattleyas	36 0-42 0
—Cypripediums per doz. blooms	6 0—8 0
Physalis (Cape Gooseberry,) per doz. bun.	15 0-21 0
Richardias (Arums), per doz. blooms	5 0—7 0
Roses, per doz. blooms—	
—Madame Abel Chatenay	2 0—3 0
—Molly Sharman Crawford	1 6—3 0
—Richmond	2 6—3 6
—Golden Ophelia	2 0—3 6
—Sunburst	2 6—3 0
—Mrs. Aaron Ward	1 6—2 0
—Madame Butterfly	2 6—4 0
Scabiosa caucasica, per doz. bun.	5 0—6 0
Smilax, per doz. trails	3 0—4 0
Statice sinuata, per doz. bun.	6 0—9 0
Stephanotis, per 72 pips	3 6—4 0
Stock, double white, per doz. bun.	6 0—8 0
Violets	1 6—3 0

REMARKS.—The general demand has not been good during the past week. There is still a short supply of good white Chrysanthemums but more coloured sorts are on offer; bronze, pink, and yellow blooms are now much better in quality, including extra fine blooms of Cranford Yellow and Uxbridge Pink. Bronze varieties include Almirante, Alcalda, September Bronze and Uxbridge Bronze. There appears to be sufficient bunch Chrysanthemums for requirements, but these fluctuate in price according to quality. More Lilium longiflorum has been marketed and prices are again easier. The supplies of Lily-of-the-Valley almost exceeds the present demand, and small consignments are arriving from Holland. Carnations and Roses are similar to last week's quotation, but the quality generally shows some improvement. The supply of Michaelmas Daisies and single Violets exceed the demand. The newest arrivals in this department are from France, which comprise a few baskets of Mimosa (Acacia), Eucalyptus, Chillies and Solanum berries.

Vegetables: Average Wholesale Prices.

	s. d. s. d.
Beans—	
—Forced	0 10—1 6
—French, per crate	2 6—4 0
—Runner, bush.	5 0—6 0
Beets, per cwt.	5 0—6 0
Cabbage, per doz.	2 0—3 0
Carrots, per ½ bag	4 0—4 6
Cauliflowers, per doz.	3 0—5 0
Cucumbers, per doz.	3 6—5 0
—Flats	15 0-18 0
French Endive	2 0—3 0
—Batavia	2 6—3 0
Lettuce, round, per doz.	1 6—2 6
Marrows,	2 0—7 0
Mushrooms	
—cups	3 0—4 0
—Broilers	2 0—2 6
—Field	1 0—1 6

	s. d. s. d
Onions—Valencia	8 0-10 0
Parsnips, per cwt.	5 0—6 0
Potatos—	
—King Edward per cwt.	5 0—6 0
—others	4 0—4 6
Spinach, per bushel	3 6—4 0
Sprouts Brussel's per ½ bag	3 0—6 0
Tomatos—	
—English, pink new crop	6 0—8 0
—pink and white, new crop	6 0—7 6
—pink, old crop	2 6—3 6
—pink and white, old crop	2 6—3 6
—Guernsey	3 0—4 0
—Jersey	3 6—4 6
Turnips, per cwt.	5 0—7 0

Fruit: Average Wholesale Prices.

	s. d. s. d.
Apples, American—	
—York Imperial per barrel	16 0-20 0
—Jonathan, per barrel	16 0-20 0
—Grime's Golden	16 0-20 0
Apples, English—	
—Worcester Pearmain, cases	20 0-25 0
½-sieve	4 0—8 0
—Chas Ross, ½-sieve	10 0-12 0
—Lord Derby	6 0-10 0
—Newton Wonder	8 0-10 0
per bushel	6 0-10 0
—Bramley	6 0-14 0
—Lane's Prince Albert, bush.	6 0-12 0
—Tyrolean	5 0-10 0
—Californian Newtown Pippins	10 0-13 0
—Jonathan	10 0-13 0
—American Cox's Orange Pippin, per case	18 0 20 0
Nova Scotia Gravenstein, per barrel	14 0-18 0
Apples, Italian, per box	7 0-10 0
Bananas	11 0-22 6
Blackberries, lb.	0 2½-0 3½
Cob nuts, per lb.	0 5½-0 6
Figs, forced, per doz.	2 0—8 0
—French, per box	0 6—1 3
—Italian, per box	0 9—1 3

	s. d. s. d
Grape Fruit—	
—Blue Goose	— 50 0
—Cape: per case	25 0-30 0
—Isle of Pines	25 0-30 0
Grapes, English—	
—Canon Hall	2 6—5 0
—Gros Colmar	1 3—4 0
—Alicante	1 0—2 6
—Muscat	2 6—7 0
Grapes Belgian	0 10-1 4
Lemons, Messina, per case	14 0-20 0
—Naples	18 0-20 0
Melons—	
—Canteloup	2 0—5 0
—Others	1 6—4 6
Oranges—	
—Californian	20 0-25 0
Peaches, English, per doz.	12 0-36 0
Pears, English—	
—Beurré Hardy,	6 0—8 0
—Conference, ½-sieve	4 0- 6 0
—Fertility	4 0- 5 0
—Comice	6 0-10 0
Pears—	
—Californian Comice—	
½-cases	12 0-14 0
cases	20 0-25 0
—Beurre D'Angou	-18 0
— —Clairgeau	14 0-16 0
—Tyrol	4 0—5 0
—ordinary	3 0—4 0
Pines	2 0—4 0
Prunes, English	7 0—8 0
—Californian	8 0-10 0

REMARKS.—Although conditions show a little more activity, trade is, on the whole, dull. The main feature during the past week has been the decline in Apple prices. This has, to a large extent, been due to heavy arrivals from the North American continent, and a general slackness in demand. The brightest feature in this section is the enquiry for English Bramley's Seedling; the few fruits that are arriving are making good prices. The quantities of hothouse Grapes have been heavy, both imported and home-grown; their sale has been fairly free and prices have held up quite well. A sprinkling of Prunes and Plums has been available and met a fairly good market. Pears are a slow trade supplies being heavy from all sources, and even good fruits of Doyenné du Comice from English and Jersey growers have not been a particularly good business. Tomatos have improved in demand, and the fruits of the new crop are selling at much higher prices than have been ruling lately. Outdoor Tomatos from Jersey are also selling better. The Mushroom trade is variable, but prices show no undue fluctuations. French Beans from Guernsey, France and Madeira are not in brisk demand, quantities being in excess of the demand. Trade in green vegetables is fair, with Cauliflowers moving freely. The Potato trade is quiet.

GLASGOW.

Favoured by the mild weather, spray Chrysanthemums arrived in immense quantities during the past week and had the effect of checking any further advance in the price of disbudded blooms. The values of the former varied from 1d. to 3d. per bunch, while the latter may be quoted as follows: Freedom, 1/6 to 1/9 for 6's; La Pactole, 1/- to 1/4; Rose Maid and Pink Perfection, 1/- to 1/3; Framfield Pink, 1/- to 1/2; Almirante, 8d to 1/-; Dolores and Belle Mauve, 8d. to 10d.; and Framfield White, 6d. to 8d. Pink Roses sold at 3/- to 3/6 per dozen; red Roses at 1/6 to 2/6; and white at 1/3 to 1/9. Carnations made 2/6 to 2/9; Lilium longiflorum (Harrisii). realised 3/6 to 4/- per bunch; Smilax, 1/- to 1/6; and Asparagus, 9d. to 1/-.

In the fruit market American Apples were plentiful and cheaper, McIntosh Red being worth from 14/- to 15/6 per case; Jonathan, 15/- to 16/-; Newtown, 13/- to 14/-; Ben Davis, 20/- to 22/- per barrel; Winesap, 28/- to 34/-; King David, 26/- to 30/-; York Imperial, 27/- to 32/-; Stark, 26/- to 30/-; and Jonathan, 22/6 to 30/-. Cases of English-grown Lord Derby Apples made 11/- to 13/-. Prices for Oranges fluctuated between 30/- and 32/-. Porto Rico Grape Fruits were worth 22/- to 23/-. Malaya Lemons (300), 14/- to 15/-; and Tripoli Lemons, 9/6 to 12/6. Scotch Bonnet Plums realised 4½d. to 5d. per lb. American Prunes, 10/- to 12/- (20lb). Melons sold for 5/- each; Kippen Grapes fetched 3/- per lb; English Grapes, 8d. to 1/- per lb; Dutch Grapes, 6d. to 7½d.; and Almeria Grapes, 20/- to 32/- per case. Pomegranates sold for 9/- to 10/- per case. Prices for English Conference Pears averaged 7/- to 8/- per sieve; Doyenné du Comice, 5/- to 6/-; Block, 25/- to 28/- per case; and Anderson, 15/- to 16/6 per half-case.

Prices for Tomatos were firmer at 6d. to 9d. per lb. French Beans made 6d. to 7d.; Cauliflowers, 1/3 to 3/6 per dozen; Cucumbers, 3/- to 3/6 per dozen; Lettuce, 2/- to 2/6 per box; and Marrows, 5/- per dozen.

THE WEATHER IN SEPTEMBER.

In several respects September formed a continuation of August; warm but humid westerly weather greatly predominating with peculiarly wet mornings, but numerous beautifully fine afternoons. No less than 74 per cent. of the month's surprisingly large rainfall was experienced during the nine hours from 3 a.m. to noon (G.M.T.). The afternoons yielded 50 per cent. more hours of bright sunshine than the forenoons. A cool spell occurred around the 26th, and on the morning of the 27th the only touch of frost was registered upon the grass—a minimum 2° below the freezing point. The mean temperature of the whole month, however, was 58°, or 2½° above the average, and on both the 18th and 19th maxima of 77° were recorded. The aggregate duration of sunshine was 125 hours, or 15 hours less than the normal. Rainfall on 17 days, an excess of two; and the total amount, in Hesketh Park, was 4.61 inches, or exactly 1¼ inches above the average. Of this total, however, so much as 1.42 inches fell during a prolonged severe thunderstorm on the early morning of the 20th, in which a fifth-of-an-inch was precipitated in 2½ minutes, and four-tenths-of-an-inch in 7½ minutes. Gales were absent. Visibility was extremely good, the deficiency of winds from the eastern quadrant being a notable one for an autumn month. *J. Baxendell, The Fernley Observatory, Southport.*

THE WEATHER IN SCOTLAND.

Rainfall exceeded the average by fully 1¼ inch, the total quantity measured being 96 millimetres (3.78 inches) This was distributed over 13 days. Between 9 p.m. on on the 19th and 9 a.m. on the 20th exactly one inch fell (25.4 millimetres). Temperature was slightly above normal, the mean for the month being 54.6°. The highest shade temperature of 73° was recorded on the 3rd, while the lowest maximum of 55° was noted on the 26th. The lowest and highest minima of 37° and 59° were on the 26th and 18th respectively, there was therefore an absolute range of 36°. On the grass the mean was 42.6°, the lowest point being reached on the 26th, viz., 29°. There was the only night of actual ground frost. During the month the ground temperature, at one foot deep, fell from 59° to 54° (5° drop). Sunshine was practically normal for the district, being 117.6 hours, a daily average of 3.92 hours, and a percentage of 31. The brightest days were 21st (8.2 hours), 24th (8 hours) 6th and 18th (7¼ hours). There was only one completely sunless day, viz., the 10th. Barometric pressure was uniformly high, the mean being 1015.53 millibars; it was greatest on the 21st (1027.3 mbs.) and least on the 12th (997.4 mbs.). Visibility was mainly good. There were no days of fog or mist, but ground haze in the mornings was common. A brilliant display of aurora was observed on the night of the 15th. Thunder accompanied by lightning was experienced during the morning of the 20th. Winds were chiefly westerly and no gales were recorded. *William McClelland, St. Andrew's Training College Gardens, Mayfield, Dundee.*

GARDENING APPOINTMENTS.

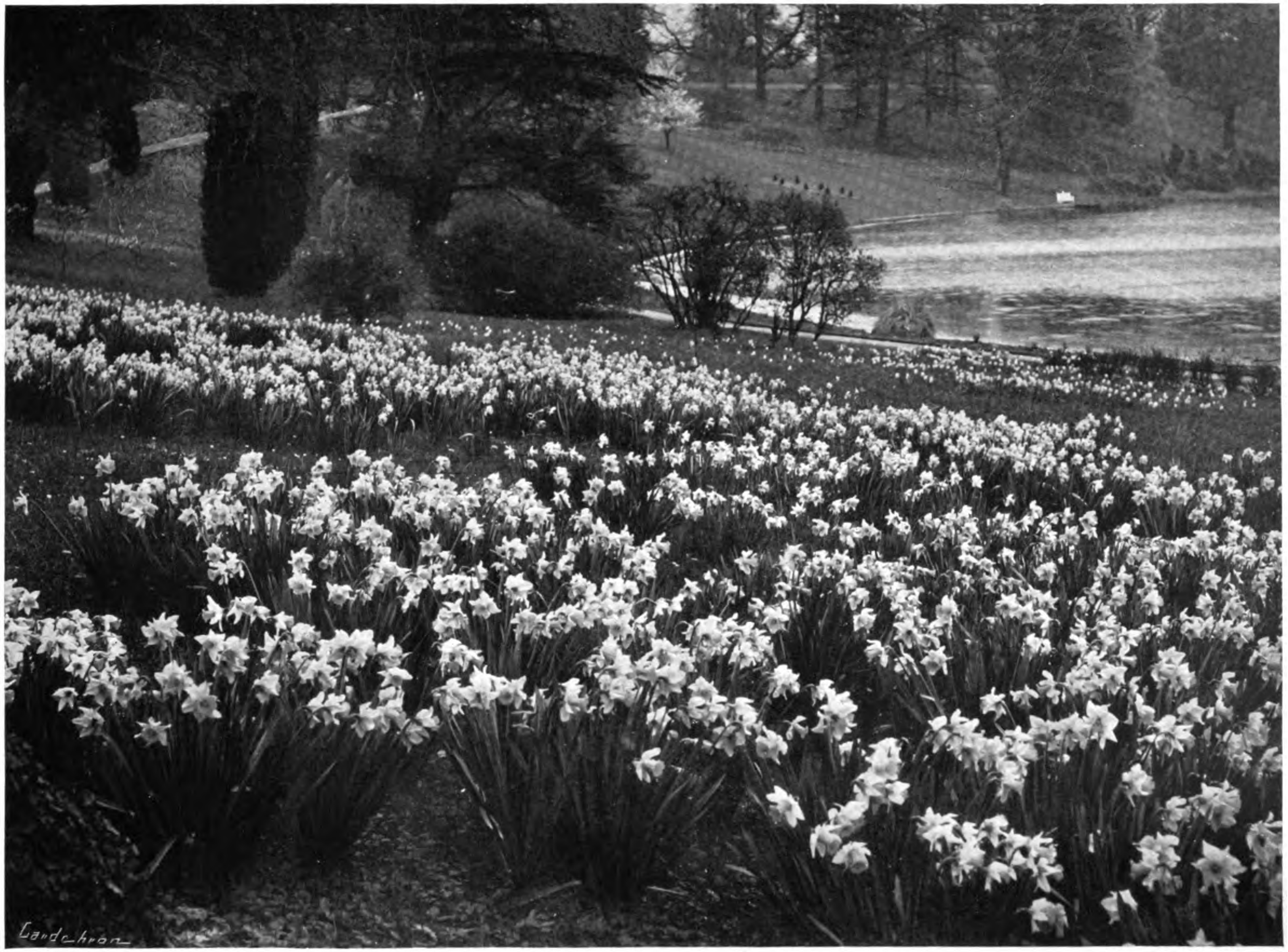
Mr. C. H. Fairs, for the past nine years gardener to E. D. MORTON, Esq., Sanderstead Court, near Croydon, to the same gentleman at Malquoits, Ewhurst, near Guildford, Surrey. (Thanks for 2/- for R.G.O.F. Box.—EDS.)

Mr. H. G, Shaw, for the past thirteen years gardener to the late ARTHUR BRADBURY, Esq., at Bryn-Lupus, Llandudno, North Wales, and previously for four-and-a-half years gardener to the late WM. SMITH, Esq., M.P., at Hemsham House, Broughton, Preston Lancashire as gardener to A. J. THORNHILL, Esq., Diddington Hall, Buckden, near Huntingdon. (Thanks for 2/6 for R.G.O.F. Box.—EDS.).

CATALOGUES RECEIVED.

E. P. DIXON AND SONS, LTD., Paragon Square, Hull.—Nursery Stock.
BRINKMAN BROS., Chertsey Lane Nurseries, near Chertsey, Surrey.—Fruit Trees and Roses. (Wholesale).
WATKINS AND SIMPSON, LTD., 27, Drury Lane, W.C.2.—Novelties, in seeds. (Wholesale).
HURST AND SON, 152, Houndsditch, E.1.—Novelties in seeds. (Wholesale.)

Supplement to the GARDENERS' CHRONICLE.



DAFFODILS NATURALISED BY THE LAKE SIDE AT BROCKET HALL, HERTFORDSHIRE.

THE
Gardeners' Chronicle

No. 2078.—SATURDAY, OCTOBER 23, 1926.

CONTENTS.

Aberdeen and its parks 322
Alpine garden—
  Gentiana detousa ... 326
Autumn tints... ... 332
Books, notices of—
  The Days of My Life 332
  The Strawberry ... 333
Bridgeford, Mr. J. M. 322
Bulb garden—
  Autumn - flowering Crocuses 326
  Fritillaria nobilis ... 326
  Lilies in October ... 326
Cherry, the Hill, of Japan 331
Chrysanthemums in the London parks ... 323
Cintra - Monserrate ... 330
Eckford Memorial Medal, award of the 322
Edinburgh, notes from 329
Fernery, the—
  A Fern-lover's greenhouse 328
Florists' flowers—
  Some old-time Chrysanthemums 326
Flower garden—
  Oxalis cernua ... 328
Fruit crops, remarks on the condition of the 335
Fruit register—
  Apple Belle de Pontoise 335
  Select varieties of Figs 335
Fruit trees, the manuring of 321
"Gardeners' Chronicle" seventy - five years ago 323
Hardy flower border—
  A double Thalictrum dipterocarpum ... 328
Holland County Potato Show 323
Indoor plants—
  Solanum Wendlandii 328
  Winter - flowering Begonias ... 328
Kew, notes from ... 329
New Zealand, note from 334
Obituary—
  Sanders, T. W. ... 339
  Vidal, Dr. Emile ... 339
Orchid notes and gleanings—
  Laelia pumila ... 328
Papaver pilosum hybridum 336
Pentstemon gentianoides 336
Parks and gardens, public 334
Poison gas for the control of insect pest ... 322
Potato haulms ... 336
Potatos, flavour in ... 336
Red spider, the control of 333
R.H.S. Hall, the new... 322
Rose garden—
  Black spot disease... 327
  Hardy bush Roses from Canada ... 327
  Rose Angèle Pernet 327
  Rose Paul's Scarlet Climber 327
Slugs and King Edward Potato 336
Societies—
  Birmingham and Midland Gardeners' 336
  Manchester and North of England Orchid 336
  National Sweet Pea 338
  Royal Horticultural 337
Trees and Shrubs—
  Quercus Cerris ... 332
Week's work, the ... 324

ILLUSTRATIONS.

Apple Belle de Pontoise... 335
Bridgeford, Mr. J. M., portrait of 322
Cherry of Japan, the Hill 330, 331
Fritillaria nobilis 323
Fruit, first prize exhibit of dessert, at the R.H.S. Fruit Show 325
Rosa rubrosa 329
Rose Agnes 327
Sanders, T. W., portrait of the late 339

Supplement Plate.
Daffodils naturalised at Brocket Hall.

Average Mean Temperature for the ensuing week deduced from observations during the last fifty years at Greenwich, 47·5.

Actual Temperature—
The Gardeners' Chronicle Office, 5, Tavistock Street, Covent Garden, London, Wednesday, October 20, 10 a.m. Bar. 30·1. Temp. 43°. Weather, Bright.

The Manuring of Fruit Trees. II.—Recent Experiments. In a previous article on this subject (see p. 1, July 3) a summary was given largely based on that drawn up by Mr. T. Wallace in the introduction to his "Experiments in the Manuring of Fruit Trees."* We propose now to recount the results which Mr. Wallace has obtained and to indicate how these results may be applied—in a cautious and tentative manner—by fruit growers to the fruit trees of their orchards. It will be remembered that Mr. Wallace decided to attack the problem not by experiments on established trees in the open, but by experiments on pot cultures; for with established trees there are so many variable and possibly disturbing factors that if they were used for experiment the results might prove no more conclusive than those of the many investigators who have so often used that method. Mr. Wallace, moreover, has adopted, and we think wisely—an indirect method of investigation. Instead of applying various dressings of fertilizers to his plants he seeks, by withholding this or that manure, to discover first how partially starved plants behave as regards growth and cropping, and how such plants react when the mineral substance which has been withheld is supplied to them. Furthermore, and simultaneously, he has investigated the influence of the soil medium—that is, the degree of its acidity or alkalinity—on the well-being of the plants. For these experiments the fruit trees or bushes, etc., were grown in 10-inch pots, except in the case of Strawberries which were planted in 6-inch pots. The culture medium was pure quartz sand to which the several mixtures of nutrient salts were added. Care was taken to keep the water content of the medium both suitable and uniform and to prevent accumulation of any toxic substances which the roots might produce, a fortnightly leaching out of the soil by water was practised. In order to maintain the soil in an approximately stable condition with respect to acidity or alkalinity, the omission of a given mineral nutrient, potassium, for example, was balanced by adding an equivalent amount of an indifferent salt, *e.g.*, of sodium. These deficiency experiments, as they may be called, were started on Apples in 1921 and are still being continued. Forty two-year-old Cox's Orange Pippin, of which thirty-six were on broad-leaved Paradise and four on a free stock, were used and the forty plants were divided into eight series of five plants each. All the plants blossomed at the same time in 1922 in which year the blossom was heavy. In 1923 those plants from which nitrogen or phosphorous-compounds, as well as those from which all mineral nutrients had been withheld blossomed later than the others and moreover, when the plants so treated did blossom the amount of flower was small in comparison with that of the plants of the other series. No less interesting is the fact that it appears from the results obtained to be possible to diagnose certain mineral deficiencies by means of the leaf characters presented by the plants suffering from them. The value of this observation is manifest and is illustrated by the observation recorded by Mr. Wallace that Leaf Scorch is to be attributed to lack of potash and also to an unsuitable ratio between the nitrogen and the potash contained in the nutrient material. Thus the author records that Leaf Scorch occurred in many of the plants, including those which were supplied with all the essential mineral nutrients, thus indicating that to manure a plant is not enough and that the perfect system of manuring consists in supplying all the essential mineral substances in proper proportion. As to the leaf behaviour, the only plants which showed leaves of normal size and colour were those which were supplied with a complete nutrient solution, *i.e.*, one containing compounds of nitrogen, potash, phosphorous, magnesium, calcium, sodium, sulphur (as sulphates), chlorine, and iron. The leaves of cultures lacking nitrogen were, as might be expected, sparse and of a pale yellow-green colour. Those of plants lacking potash were normal at the start, but some showed lack of growth and assumed a dull green colour. The leaves of plants starved of phosphates bore a bronzed appearance—so often seen in trees in private gardens—and very often the bronzing was accompanied by purple spots on the leaves. The foliage, moreover, was scanty and tended, as in the case of nitrogen-starved plants, to be confined to the tips of the branches. Lack of calcium produced an astonishing result: the foliage was larger in amount than in any other set and the leaves tended to persist long on the trees. With the absence of magnesium leaves began well and grew normally for a time, but when full growth was reached they showed "break down," became blotched, the blotches turned brown and the tissues in them died, with the result that the trees became defoliated precociously. Lack of all mineral nutrients resulted in small and sparse leaves which often developed an intense red colour. With respect to time of defoliation, the general conclusion is that lack of nitrogen or of phosphorous, as well as lack of all essential minerals, results in early defoliation. Conversely the presence of all the essential minerals or a lack of potash or of calcium does not bring about early defoliation. Lack of nitrogen appears also to result in a lighter colour of bark—a very light brown as compared with that of normal trees. The effects of these manurial treatments were also shown in the colour and other characters of the fruits (Apples). Lack of nitrogen resulted in small, highly coloured fruits with skin lacking polish and white and hard flesh of acid taste; in fact fruits like those of grass orchards. Lack of phosphorous-compounds led to the production of very soft fruits of unpleasant flavour and lacking sweetness, and it is noteworthy that the high acidity of fruits borne by trees lacking phosphorus was shown not only by Apples but by Gooseberries, Black Currants and Strawberries. The other experimental plants did not produce enough fruit to permit of the drawing of conclusions. Root development was also affected considerably by the manurial treatment. Deprived of potash the root system was very small and lacked fine fibres. Roots from which magnesium was withheld had blackened tips. Lack of calcium or of magnesium appeared not to affect the amount of root development; lack of phosphorus curtailed it and lack of either potash or nitrogen reduced root growth still further. It would, of course, be premature to draw confident conclusions from these observations. For that we must await the experimental sequel. Fruit growers will await it, indeed, with much interest, for already the results encourage the hope that upon them a rational and economic system of manuring may be established. They also give ground for the expectation that the grower may be able to tell at a glance from the appearance and behaviour of his trees what system of manuring to adopt in order to bring them to a perfect state of full and regular bearing.

Supplementary Illustration.—The Supplementary illustration presented with this issue shows great masses of Daffodils naturalised in grass by the lake-side at Brocket Hall, Hertfordshire, the residence of Sir Charles Nall-Cain. These large colonies of Daffodils are most picturesque, forming with Scillas, Crocuses, Snowdrops and other bulbous flowers the advance guard of the wealth of floral beauty that makes gardens places of delight in spring, summer and autumn. Some of the best varieties for naturalising are amongst the commonest and cheapest and the bulbs will increase in numbers if care is taken to allow the foliage to ripen before the mower is used. The naturalised Daffodils and other bulbs do especially well on the open banks by the lake but other parts of the pleasure grounds of the fine old estate are equally beautiful with them in spring, as may be seen on reference to the illustrations of Brocket Hall given in our issue of May 15, 1926.

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* *Journal of Pomology and Horticultural Science.* IV. 3 and 4. June, 1926.

The New R.H.S. Hall.—The foundation stone of the new Hall of the Royal Horticultural Society, in Elverton Street, Westminster, was laid by Lord Lambourne on Tuesday last, in the presence of a numerous company. Mr. T. Musgrave, Chairman of the Housing Committee, introduced Lord Lambourne who, when he had placed the large stone in position and in a workman-like manner tapped the top with his trowel, proceeded to give some particulars of the new building. He stated that the hall will have double the accommodation of the old building and special care had been taken in regard to lighting, heating, ventilation and all general arrangements required for exhibitions. He said that the decoration of the interior would be of a simple character, with the walls panelled in a suitable material for the display of flowers. The exterior of the building would be kept on severe lines, and the new front elevation will be built of Portland stone in the lower portion and brick above. They hoped to have the new hall ready for use in sixteen months from now, before the Society celebrates its 125th anniversary; the Society would then possess a fine, if not the finest, exhibition hall in central London. Its length will be 182 feet, compared with 141 feet of the old hall, and its width 125 feet against 75 feet in the present building. The floor area will be 20,000 compared with 10,000 feet. The Housing Committee is paying special attention to the decoration of the building, all devices for the comfort and safety of visitors had been thought of, and every requirement of the London County Council complied with to the fullest extent, and he was glad to say that the Society has received every courtesy from the L.C.C. It was, said his Lordship, an interesting coincidence that the ceremony was taking place on the birthday of the late Rev. W. Wilks. Coins, medals of the Society and records of the time and date of the event were inserted in a cavity in the foundation stone. The silver trowel used was presented to Lord Lambourne as a souvenir of the occasion.

Estates in the Market.—It is sad news that the demolition has been decided on of Hardwick House, near Bury St. Edmunds, the residence of the late Mr. G. G. Milner-Gibson-Cullum. Much of the surrounding land was disposed of over a year ago, and preparations are now being made for the sale of the interior and exterior fittings, including a number of fine garden ornaments. The seat was purchased by Sir Thomas Cullum in 1656, and has remained in the use of members of the same family ever since. The Wildernesse, a lovely estate about two miles from Sevenoaks, Kent, which was purchased by the first Lord Hillingdon, about fifty years ago, has changed hands lately by private treaty. The property, which includes a golf course, runs to 230 acres.

Henry Eckford Memorial Medal, 1926.—We are very pleased to learn that the Trustees of the Henry Eckford Memorial Fund have awarded the Eckford Memorial Medal for the ensuing year to Mr. William Cuthbertson, V.M.H., the head of the firm of Messrs. Dobbie and Co., who has in many and various ways done good work on behalf of Sweet Peas. A portrait and appreciation of Mr. Cuthbertson appeared in our issue of November 21, 1925.

Poison Gas for the Control of Insect Pests.—Although there was a very small attendance at the meeting arranged by the British Florists' Federation at the Strand Restaurant, on Wednesday, October 13, those flower growers who did attend were greatly interested in the lecture delivered by Mr. Theodore Parker on the Use of Poison Gas for the Control of Insect Pests. They also profited greatly by the discourse, as Mr. Parker pointed out very clearly the many difficulties that attend the fumigation of greenhouses by sodium-cyanide, hydro-cyanide, calcium-cyanide and tetrachlorethane. It was suggested that there was great need for further observation and experiment and that if growers would pay particular attention to the conditions prevailing at the time of fumigating they would obtain information which would be valuable not only to themselves but to other growers and those who, like himself, were experimenting with poison-gas fumigants. Mr. Parker made particular reference to the epidemic of Red Spider on crops under glass in the Lea Valley during the present year, but as he has dealt with this subject in our present issue we need not here enter into details. The members present at this lecture showed their appreciation by inviting Mr. Parker to lecture to them again in the course of the next few weeks.

Mr. J. M. Bridgeford.—On Tuesday last the members of the National Sweet Pea Society unanimously appointed Mr. J. M. Bridgeford as their President for the ensuing year. Mr. Bridgeford is Managing Director of Messrs. Watkins and Simpson, wholesale seedsmen, of Drury Lane, London, and during the present year, on behalf of the National Sweet Pea Society, he conducted the Sweet Pea trials at his firm's trial grounds at Twickenham. For many years Mr. Bridgeford has been a member of the National Sweet Pea Society's Executive Committee, and he has put in a great deal of unostentatious but hard work on behalf of the Society, while in recent years he has held the onerous position of Treasurer. For the many services thus rendered the Society has honoured him with the presidency and also presented him with its Gold Medal. A native of Dornoch, Sutherlandshire, Mr. Bridgeford commenced his business life as an apprentice to Messrs. Howden, seedsmen, of Inverness, with whom he remained for four-and-a-half years before coming south to enter service with the late Mr. Peter Barr. He acted as personal assistant to this famous old Scot at the office, in the seed shop and at the Tooting nursery, and later assisted in the removal of the nursery stock to Messrs. Barr and Sons' new nurseries at Long Ditton. After spending five-and-a-half years with Messrs. Barr and Sons, Mr. Bridgeford obtained an appointment with Messrs. Watkins and Simpson, and it is with this firm that his life's work has been accomplished, for during the past thirty-three-and-a-half years he has had charge of various departments and has travelled in most European countries, in Canada and the United States on behalf of the firm. In due course he became manager, and in 1910 Managing Director, when Mr. Alfred Watkins, founder of the firm, placed the general management of the business in the hands of his younger colleague. Mr. Bridgeford's special interest in Sweet Peas dates from the bi-centenary celebration of the introduction of the Sweet Pea into England, and it has continued in association with the National Sweet Pea Society ever since it was founded in 1900. For one period he was chairman of the Society's Executive Committee. Mr. Bridgeford is a member of the Royal Horticultural Society's Floral Committee and is also an enthusiastic supporter and member of the Executive Committee of the Royal Gardeners' Orphan Fund.

MR. J. M. BRIDGEFORD.

The New President of the National Sweet Pea Society.

Aberdeen and its Parks.—The fine work done by Aberdeen in the provision of public parks for its citizens formed the subject of an interesting lecture given by Councillor Roberts, convener of the Links and Parks Committee of the Aberdeen Town Council. The only park or recreation ground belonging to the city sixty-two years ago was the Links—a magnificent expanse of moorland, sand dunes and sea-beach lying between the Don and the Dee. During little more than half-a-century this has been supplemented by the acquisition and formation in 1871 of the Victoria Park; the laying out of the Union Terrace Gardens in 1878; the gift to the community by Miss E. C. Duthie, of Ruthrieston, of the Duthie Park; by the purchase of ground from the proprietors of Hilton in 1893 to form the Stewart Park; the purchase of the estate of Westburn in 1900; the acquisition of a stretch of land at Girdleness in 1901 to form what is now the Walker Park; and, finally, the purchase in 1920 of the estate of Hazlehead at a cost of £40,000. In addition, several children's playgrounds have been laid out in various parts of the city. Commenting on the city's oldest recreation ground—the Links—Councillor Roberts said it was interesting to note that by Royal Charter, dated July 17, 1617, King James VI granted to the town the forest of Slocket, the lands of Rubislaw, and other grounds and fishings, together with "the green fields commonly called the Links of the Burgh as they lie in length and breadth from the watermouth of the Dee to the watermouth of the Don." Mr. Roberts, in the course of his delightful lecture gave many interesting facts regarding the purchase and gradual formation of the various parks of the city and was awarded the warm thanks of a large audience at the close.

Centuries-old Mulberry Tree.—The venerable Mulberry tree which grows in the Cooper Public Park, Elgin, the capital of Morayland, is now for the first time for many years bearing a crop of fruit. Leading authorities estimate its age to be several hundreds of years, and suggest that it must have been planted by some dignitary of Elgin Cathedral, now a beautiful ruin, in the days when that fine pile was in its pristine glory. Be that as it may, the tree's fine, healthy appearance says much for the favourable climate of Morayshire.

Tredegar Park as Show Grounds.—The Deer Park, by Viscount Tredegar's home in South Wales, is to be the venue of the eighty-sixth exhibition of the Royal Agricultural Society, which will be held from the 5th to the 9th of July next year. The ground will extend to 160 acres, and is near the main entrance to Tredegar Park; it is beautifully furnished with trees which will form grateful shade if the show is favoured with bright, sunny weather. The work of erecting the necessary buildings has already commenced, and the contractors' men have been busy for some five or six weeks placing in position those buildings which are the property of the society, and are moved from place to place. The Royal Pavilion, a substantial erection, which first appeared at Shrewsbury in 1884, is almost completed, and the members' and stewards' pavilions are rapidly assuming shape. During the winter the out-door work will be suspended, but will be recommenced about February. Viscount Tredegar has given permission for the felling of trees where this is absolutely necessary, but every effort will be made to avoid the destruction of good trees. The horticultural section of the show will be a large one, and is likely to prove popular with visitors.

Medals for Long Service.—The Dresden Chamber of Horticulture has just made a presentation of medals to gardeners and nursery employees who have been for twenty-five years or more continuously in one situation, and have given satisfaction therein. Among the recipients, who number sixteen, are two with over forty years', and several with over thirty years' record. The medal is in bronze, of a convenient size for wearing.

Chrysanthemums in London Parks.—As usual at this time of year, Chrysanthemum displays are being made in a number of the London parks, including Battersea Park; Waterlow Park, Highgate; and Finsbury, Southwark and Victoria Parks. These exhibitions are very much appreciated by the public and do a great deal towards fostering the love of flowers which is such a valuable factor in education.

Record Bunch of Grapes.—A monster bunch of Grapes far exceeding in weight anything of which there are records in this country, was presented by Messrs. Mash and Austin, Ltd., Covent Garden, to the Lady Mayoress for the bazaar held on behalf of St. Bartholomew's Hospital Week. The bunch weighed 37½ lbs, and measured three feet two inches in length, without the stalk, and was fourteen inches across the shoulders. The berries were perfectly formed, of beautiful black colour and carried a fine bloom, indeed, the bunch was perfect in every respect. We understand that this remarkable bunch of Grapes was grown in Belgium and was sent to this country by aeroplane to Covent Garden, where it was purchased by Mr. Harry Mash for £37 10s. 0d., being £1 per pound. The largest recorded bunch of Grapes ever grown in this country weighed 26 lbs. 4 ozs; the variety was Trebbiano. It was shown at the Edinburgh exhibition by Mr. Curror in 1875, and it is a remarkable coincidence that the next heaviest bunch, namely, one of White Nice, weighing 19 lbs. 5 ozs., grown by a Mr. Dickson, was shown on the same occasion. We believe that the monster bunch referred to above was sent over under the name of Belgian Royal, but some reports stated that the variety was Alicante.

Radio and Roses in Holland. — Mr. G. A. van Rossem, the well-known Dutch Rose-grower, gave a radio talk on October 18 from the wireless station at Hilversum on the subject of "Roses in Your Garden." This is the first occasion on which the cultivation of Roses has formed the subject of a radio talk in Holland, and it is proposed to give three such talks during the year, under the auspices of the Dutch Rose-growers' Society.

Holland County Potato Show.—The Sixth Annual Holland County Potato Show to be held at Boston, on October 28th, will be officially opened by the Rt. Hon. Lord Bledisloe, K.B.E., Parliamentary Secretary to the Ministry of Agriculture. Coun. Wm. Gilding, J.P., Chairman of the Show Committee will preside. Ald. Tom Kitwood, J.P., will preside at the Public Luncheon at which a large number of well-known men in the Potato world will be present and the speakers will include the Rt. Hon. Lord Bledisloe, Sir A. Weigall, Mr. A. W. Dean, M.P., Mr. H. Haslam, M.P., Col. Henage, M.P., Mr. Smith Carrington, M.P., Mr. E, J. Deal (President of the Agricultural Seed Trades Association), Mr. Geo. Major, Mr. F. H. Smith, and Ald. F. E. Bowser (Chairman of the Boston Farmers' Union).

National Rose Society's Shows in 1927.—During the coming year, the spring show of the National Rose Society will be held at Westminster on Friday, April 22; the Summer Show, in London, on July 1 and 2; and the Provincial Show, at Cheltenham, on July 6 and 7. The Special Show of New Seedlings, at which the *Daily Mail* Cup will again be competed for will be held at Westminster on July 15, and the Autumn Show at Westminster on September 9 and 10. The Council of the N.R.S. has decided to hold a Rose Conference in London in July, 1928; an announcement as to the arrangements will be made later.

Appointments for the Ensuing Week.—Monday, October 25: Birmingham and Midland Counties Gardeners' Mutual Improvement Association's lecture. Wednesday, October 27: Portsmouth Horticultural Society's show (three days); Glasgow and West of Scotland Horticultural Society's lecture; Wimbledon Gardeners' Society's meeting. Thursday, October 28: Holland County Potato Show; Paisley Florists' Society's meeting. Friday, October 29: Imperial Fruit Show at Holland Park Hall (eight days.).

"Gardeners' Chronicle" Seventy-five Years Ago.—*How to get rid of Cockroaches.*—Mr. Tewkesbury, of Nottingham, in a letter to the *Manx Sun*, says: "I forward an easy, clean, and certain method of eradicating these insects from dwelling-houses. A few years ago my house was infested with cockroaches (or 'clocks,' as they are called here), and I was recommended to try Cucumber peelings as a remedy. I accordingly, immediately before bed-time, strewed the floor of those parts of the house most infested with the vermin with the green peel, cut not very thin from the Cucumber, and sat up half-an-hour later than usual to watch the effect. Before the expiration of that time the floor where the peel lay was completely covered with cockroaches, so much so, that the vegetable could not be seen, so voraciously were they engaged in sucking the poisonous moisture from it. I adopted the same plan the following night, but my visitors were not near so numerous—I should think not more than a fourth of the previous night. On the third night I did not discover one; but anxious to ascertain whether the house was quite clear of them, I examined the peel after I had lain it down about half-an-hour, and perceived that it was covered with myriads of minute cockroaches about the size of a flea. I therefore allowed the peel to lie till morning, and from that moment I have not seen a cockroach in the house. It is a very old building; and I am certain that the above remedy only requires to be persevered in for three or four nights, to completely eradicate the pest. Of course it should be fresh Cucumber peel every night." *Builder. Gard. Chron., October* 25, 1851.

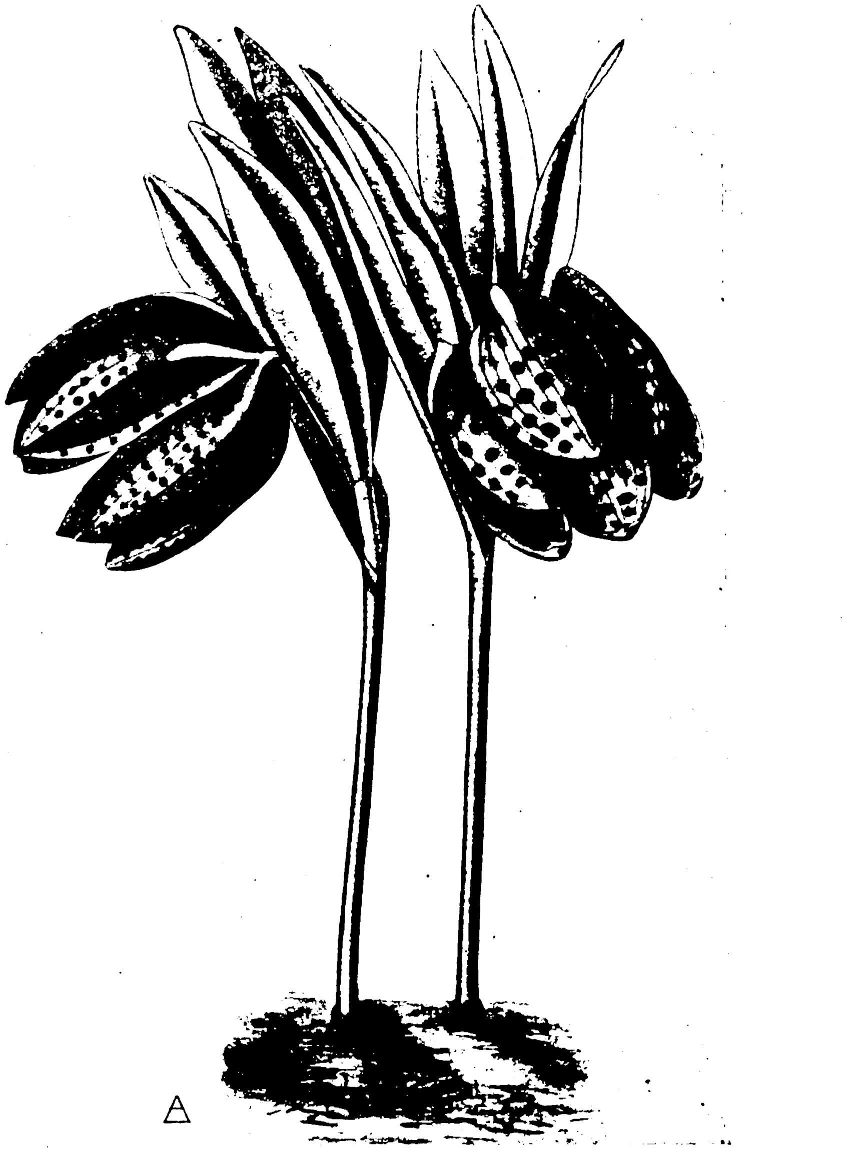

FIG. 147.—FRITILLARIA NOBILIS.

(see p. 326).

The Week's Work.

THE ORCHID HOUSES.

By J. COLLIER, Gardener to SIR JEREMIAH COLMAN, Bart., Gatton Park, Reigate, Surrey.

Epidendrum radicans.—Plants of this tall-growing species are very useful; their long, scandent growths may be utilised with good effect for trailing up posts or the back walls of the houses. They are also very effective as back plants in exhibition groups. When their requirements are understood they may be made to flower in a comparatively dwarf state by adopting the following method. The young shoots of plants that have made strong growths during the past season may now be cut off in lengths of about two feet, below some of the aerial roots. These portions should be potted in the usual way, placing four to six pieces in a thirty-two-sized pot and tying each shoot to a stout stake. A suitable rooting-medium consists of a mixture of three parts Sphagnum-moss, one part Osmunda-fibre cut into short portions, and some crushed crocks. After potting them the plants should be given a thorough watering, after which a light spraying each morning will suffice.

Epiphronitis Veitchii.—This hybrid is a cross between Epidendrum radicans and Sophronitis grandiflora, and is of a very much dwarfer habit of growth than the Epidendrum parent. In making up new specimens of this pretty hybrid, cut off the tops of the shoots below some of the aerial roots and place from ten to fifteen pieces in a teak-wood basket six inches in diameter. Both the species and hybrid mentioned grow well in an intermediate temperature and they need very similar treatment.

Lycaste Skinneri, L. Deppei and L. cruenta.—These species and a few others of this genera are completing their season's growth and forming a quantity of fresh roots. They will still require a fairly liberal supply of water until the new pseudo-bulbs are fully developed, after which the quantity of moisture should be reduced, but at no time should they be allowed to suffer through withholding water to excess. The plants thrive well in a cool house, but it is advisable to keep their surroundings rather drier during the winter to prevent the foliage from being disfigured with spot disease.

THE KITCHEN GARDEN.

By F. STREETER, Gardener to LORD LECONFIELD, Petworth Park, Petworth, Sussex.

Mushrooms.—Owing to drought during the past three months, field Mushrooms have been very scarce and great care is necessary to keep an even and congenial temperature in the Mushroom houses. Beds in full bearing will be greatly benefited by applications of weak liquid manure. Continue to collect fresh materials for making successional beds. The manure should be placed in an open shed and turned frequently until it has become thoroughly sweetened and ready for bringing into the house. Make sure that the manure is rammed very hard when making the new bed.

Seakale.—This vegetable makes a welcome change from November onwards. Retarded crowns are the best for the earliest supplies, and a sufficient number should be introduced into the forcing house, placing them in the warmest end for preference. Exclude the light and hang a mat over the door. The first supplies will be ready in about four weeks, and successional batches should be introduced to maintain a continuous supply. Keep the floor damp at all times. So soon as the foliage has died down on the main plantings the whole crop should be lifted, prepared for forcing, and the young thongs selected for next season's planting. Cut the latter into lengths and tie them in bundles of fifty. Cut the crown end straight across and the rooting portion obliquely. Place the bundles in sand or ashes under a north wall until the cuttings are required for planting.

Rhubarb.—For an early supply of Rhubarb a number of selected crowns of an early variety should be lifted and allowed to lie dormant for two or three weeks preparatory to bringing them into the forcing house, when they should have a few inches of soil placed over them, and be kept sprayed with tepid water. Owing to the general shortage of Apples there will be an increased demand for early Rhubarb, for which the grower should be prepared.

FRUITS UNDER GLASS.

By T. PATEMAN, Gardener to SIR CHARLES NALL-CAIN, Brocket Hall, Hertfordshire.

Vineries.—When the Grapes have been harvested the vines should be watered, for whilst the Grapes have been hanging the borders have been allowed to dry out somewhat. A thorough watering now will assist the vines to form good, plump buds that will produce next season's crop, but before applying the water shorten the growth so that the sun and air may enter freely and assist in ripening the wood. Vineries are frequently used for housing Chrysanthemums, and as these plants require an abundance of ventilation, air should be admitted as freely as circumstances will permit.

Late Vinery.—The Grapes in this house should have finished colouring by this date, and any that have failed to do so will, I fear, not finish satisfactorily. The Grapes in this house will remain on the vines probably well into the new year, and to keep them in good condition a little care is needed. The vines will require very little, if any, water, after this date, but much will depend on the locality, the soil, and the drainage. If the soil in which the vines are growing is of a retentive nature it should hold sufficient moisture to keep the berries in good condition, but if the soil is of a light texture a little water may be found necessary to keep the berries plump. Should the borders require watering, see that the outside conditions are dry and favourable to admit of this being done; the water should be applied as early in the day as possible so that the atmosphere may become dry before the evening. The top ventilators should remain open both day and night, and in dull weather it will be wise to dry the atmosphere by using a little fire-heat. The bunches should be examined frequently for decayed berries, for if these are allowed to remain they will set up decay in others. Robins are often a source of trouble to late Grapes, and means should be taken to keep them out of the vinery by covering the ventilators with small-meshed netting.

General Remarks.—The work of tree-lifting and root-pruning should be completed as early as possible. It is essential that this work should be carried out as expeditiously as possible, but take every care to preserve all the fibrous roots.

THE FLOWER GARDEN.

By F. C. PUDDLE, Gardener to LORD ABERCONWAY, Bodnant, Taly-Cafn, North Wales.

Early-flowering Gladioli.—The early-flowering Gladioli are more generally grown for cut flowers than for garden decoration, but they are equally useful for both purposes. The corms should be planted during the next few weeks. A well-drained, moderately rich soil, in a fairly sheltered position, suits them best. The corms should be planted about six inches deep. If groups are planted in the hardy flower borders for garden decoration they may be associated with other dwarf plants which will succeed them in flowering; but these carpeting plants should not be of such dense growth that they form a harbour for slugs, or the young growths of the Gladioli will be eaten as they appear above ground. This section of Gladioli should not be lifted annually (as is usually done with the later flowering varieties), but left undisturbed so long as they flower satisfactorily, and when they show signs of weakness they should be replaced with entirely new corms. Two of the most reliable varieties are G. Colvillei var. The Bride, and G. Peach Blossom. I have always found that the latter will remain satisfactory over a longer period than any of the other varieties of this section. G. cardinalis and G. tristis are two charming early-flowering species which are worthy of extended cultivation, whilst G. byzantinus may be naturalised in sunny positions where the soil is light and well-drained.

Irises.—Spanish and English Irises may be grown under the same conditions as suggested for early-flowering Gladioli, and these bulbs should be planted now. The English Irises are excellent for naturalising, and they are very effective when planted in association with hardy Primulas.

Trees and Shrubs.—Although the majority of trees and shrubs may be transplanted successfully at almost any time between October and March, it is a wise practice to make early preparations, for it frequently happens that the soil is in better condition for planting operations at the end of October and the early part of November than at any time during the winter; moreover, the roots still retain a certain amount of activity, and this enables them to adapt themselves to the new conditions. In the case of deciduous trees and shrubs which are to be moved a short distance only, there is no need to wait until the foliage has actually fallen, provided it is mature, for if the plant can be moved with a fairly large ball of soil it is obvious that it will become more quickly established if the operation can be performed before growth ceases. The majority of evergreens are best transplanted either in early autumn or in the spring. Winter transplanting of evergreens should not be attempted unless it is possible to move them with a good body of soil. Rhododendrons and other members of the Ericaceae are exceptions, for these have such a close rooting system that it is usually possible to remove them with the majority of their roots intact, and transplanting may be performed at almost any season except when the plants are in really active growth. When preparing for new plantations, the soil should, if possible, be trenched thoroughly and decaying organic matter or humus in such form as may be available added. If, however, it is only possible to prepare holes for the plants, these should be of considerably larger dimensions than is necessary for the reception of the roots, so that a circle of good, soil may be provided to encourage rapid establishment and good growth. In the case of heavy soils it is necessary to make sure that the holes are properly drained, for a carelessly-made hole will often form a trap for water, to the subsequent detriment of the plant.

HARDY FRUIT GARDEN.

By W. AUTON, Gardener to VISCOUNT ELVEDEN, Pyrford Court, Woking, Surrey.

Preparations for Planting.—This work should be completed so that planting can be carried out without delay so soon as the trees are obtainable. The soil is very dry to an unusual depth this autumn, and in many localities conditions will not be favourable for planting until a considerable amount of rain has fallen. The selection of the trees, however, should not be delayed, as the early purchaser generally succeeds in getting what he wants and of the best quality. The type of tree best suited to the small or medium-sized garden is usually the bush form. When grown in the kitchen garden, such trees occupy comparatively little space, and if given proper attention, last for a period of twenty or twenty-five years without unduly encroaching on the surrounding space. Standard trees take up a large area and are better suited to orchard planting. When planting is to be done in grass, the turf should be stripped off a circle at least six feet in diameter and the holes well prepared, chopping the turf and mixing it with the top soil for planting. In preparing stations for Plums or other stone fruits, liberal quantities of old mortar rubble should be mixed with the soil, whilst crushed bone is an excellent ingredient for mixing with all soils being prepared for fruit trees.

Wall Fruit Culture.—Where wall space is available the best use should be made of it for the production of high quality fruits and there is no aspect but what can be turned to account for the planting of some kind of fruit tree. Figs and vines should be planted only on south walls, but Apricots, Peaches, Nectarines, Plums and Cherries may be grown on south or west walls. A selection of Pears and Plums may be also be grown on east walls, and for a north wall, Morello Cherries are the most satisfactory, but Plums, Pears and sweet Cherries may also be grown, and frequently provide valuable late crops. Gooseberries and Currants trained on north walls are also valuable for their late crops of fruit. Where trees are to be planted on walls the latter should be wired with stout galvanized wire. The training of trees by means of nails and shreds is an unsatisfactory method of attaching them, and they can be much more readily and securely attached by tying them to wires. Moreover, the work can be left much neater in appearance and there is less liability of the fruits becoming bruised from the effects of projecting nails.

Autumn-Fruiting Raspberries.—These are still yielding fruits of good quality, the warm, dry weather of the first half of the month having been favourable to their development. Examine the canes frequently to ensure none of the fruit being wasted.

Thinning Fruiting Spurs.—Certain varieties of Apples and Pears have a tendency to become overcrowded with spurs, and now that the fruits are gathered any necessary thinning may be carried out to enable the energy of the tree to be concentrated on the finishing of the remaining buds. It not infrequently happens that trees with a moderate efflorescence bear highly satisfactory crops of fruit, while those with a superabundance of blossom fail to bring crops to maturity.

PLANTS UNDER GLASS.

By JOHN COUTTS, Assistant Curator, Royal Botanic Gardens, Kew.

Gladiolus Colvillii.—This Gladiolus, with its white variety The Bride, as well as the many beautiful varieties of G. ramosus and G. nanus are all useful for conservatory decoration, or for furnishing a supply of cut flowers. Where required for conservatory or house decoration they are best grown in pots, but if required for supplying cut spikes they may be grown in boxes or even planted out in cold frames. As they are free-rooting they require fairly large pots, those seven inches in diameter being a suitable size. Given plenty of root room the foliage is retained in better condition. After potting they should be stood in cold frames until such time as they are required for gentle forcing. A few good varieties are Fire King, Peach Blossom, Blushing Bride, Non Plus Ultra, Crimson Queen and Rose Queen.

Lily-of-the-Valley.—So soon as Lily-of-the-Valley crowns are received they should be potted, placing twelve to fifteen crowns in a five-inch pot, or they may be packed closely in boxes if large quantities are required for supplying cut flowers. The pots containing the crowns should be plunged to their rims in a bed of ashes in an open position, leaving the crowns fully exposed, as they force more readily after such exposure. Imported forcing crowns are generally lacking in foliage when in flower; this is a great loss, especially when the flowers are cut. To provide a supply of foliage it is a good plan to use home-grown plants, and for this purpose turves should be cut from a well-established bed and placed in suitable-sized boxes. To ensure a supply of leaves during the earlier part of the season, it will be necessary to start them in advance of the flowering crowns, but afterwards the flowers and foliage will develop more naturally together.

Crinum and Agapanthus.—These and such other plants that require protection in winter should now be placed under cover; failing a cold greenhouse, which is ideal for the purpose, a frost-proof shed answers very well.

Fuchsias and Erythrina Crista-galli.—These plants may be wintered perfectly under the conditions previously described. Young plants of Erythrina should not be dried off altogether or they will die, for they will not withstand complete drying off until they have formed a good woody root-stock.

Astilbes (Spiraea).—These are very useful plants for forcing purposes and should be potted when received from the nurseryman. As they develop a large amount of foliage and enjoy ample supplies of water when growing, they should be grown in fairly large pots, those eight inches in diameter being suitable for large clumps. After potting them they may be plunged in the open or stood in a cold frame until such time as they are required for forcing. A. japonica, A. astilboides and their varieties are all suitable for forcing, and are imported in large quantities for this purpose; also the rose-coloured Peach Blossom and Queen Alexandra.

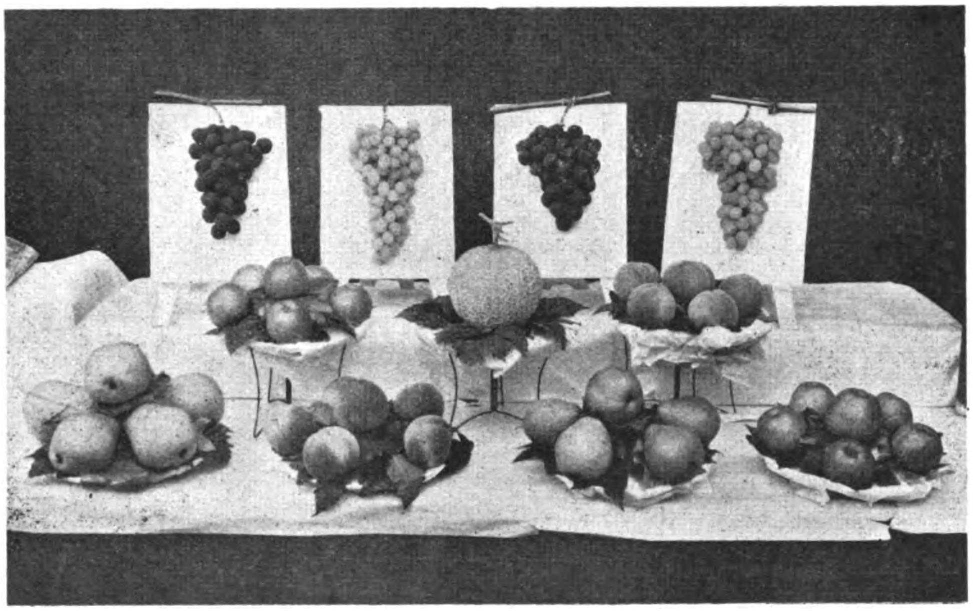

FIG. 148.—THE DUKE OF NEWCASTLE'S FIRST PRIZE EXHIBIT OF NINE DISHES OF DESSERT FRUIT AT THE ROYAL HORTICULTURAL SOCIETY'S FRUIT SHOW, OCT. 12. (see p. 316).

Polygonatum multiflorum (Solomon's Seal).—This Lilaceous plant, with its graceful habit and distinct shade of green, is very useful for decorative work; large quantities of roots are imported every year for forcing, but plants are easily grown in the reserve garden for the purpose. Strong roots should be placed in suitable-sized pots, those six inches to eight inches in diameter being suitable for general decorative work. Where required in quantity for cutting, the roots should be packed closely together in boxes, standing the boxes out-of-doors until such time as the plants are required for forcing.

FOR NORTHERN GARDENERS.

By A. T. HARRISON, Gardener to the MARQUIS OF AILSA, Culzean Castle, Maybole, Ayrshire.

Vineries.—So soon as the Grapes are cut, the borders, which have been kept dry for the past two months, should be soaked with water. The amount of water required to moisten a dry border is astonishing, and the best plan is to water it two or three times in close succession, so that the moistening process is spread over a day or two, making certain that the border is thoroughly saturated. Thereafter liquid manure should be given in a diluted state, or an approved vine fertiliser in solution. The vinery should be ventilated fully night and day in order to harden and ripen the wood, and although at this season of the year the vineries may be turned into store houses for Chrysanthemums and other plants, it should never be forgotten that their primary object is to produce Grapes, and that any plants of a temporary nature placed in them must accommodate themselves to the conditions necessary to that end.

Double-digging.—Where practicable a portion of the kitchen garden should be trenched or double dug each season. Shallow soils will be deepened, made more retentive of moisture, and better fitted to withstand drought, whilst heavy soils will also be improved by being made more porous, provided the drainage is efficient. Where the subsoil is of a heavy, retentive nature this may be broken up, left at the bottom and mixed with strawy manure or freshly-gathered leaves. Turning over heavy soil improves its quality considerably.

Spring Bedding.—Where spring displays are a feature the time is at hand to get the beds and borders furnished with the various plants and bulbs so that they may become established in their new quarters before the approach of severe frost. When the bulbs have all been planted, and their sites marked temporarily, the carpeting plants, such as Myosotis, Aubrietias and Wallflowers may be placed in an irregular manner to cover most of the bare surface. Do not plant these flowers in straight rows or lines, but dot them about so that the spaces occupied by the bulbs are not conspicuous, and when the latter come up they will appear as if coming through a green covering instead of the bare earth. A great variety of both bulbs and early-flowering plants may be employed in the spring garden with charming results, and these, if not grown on the premises, may be obtained at very reasonable prices.

Pampas Grasses.—These handsome grasses are now at their best, and the effect where they have been planted freely is very fine during the rapidly shortening days. They make excellent dot plants on the lawn, and where a sheet of water exists they may be planted at conspicuous points, where their silvery plumes will be reflected in the still water. Several forms of Gynerium argenteum are obtainable in both tall and dwarf varieties, and a very fine effect may be made by planting groups of the various sorts, intermingled with groups of other autumn-flowering plants, such as Michaelmas Daisies or Kniphofias. The early-flowering Arundo conspicua has been carrying its graceful, arching sprays since July.

BULB GARDEN.

FRITILLARIA NOBILIS.

This charming little native of Armenia (Fig. 147), although of lowly growth, for it rarely exceeds a height of four inches, bears unusually large flowers for so small a plant. It was discovered by Sintenis in 1890, in the Pine-woods of Keossedagh, and was subsequently obtained by Max Leichtlin, who distributed a fairly large number of living specimens.

It has a small, globose bulb, and the erect, one-flowered stems bear several erect, two-inch long leaves. The flower is slightly drooping and carried on a very short peduncle, campanulate with the perianth segment about one-and-a-half inch long.

On the outer surface of the flower the colouring is purplish-brown or claret-brown, while on the inside the colour is greenish-yellow, freely and heavily spotted with claret-brown, the colour of the markings being so intense that they show through to the outside of the flower.

Although not commonly seen in gardens this species is sufficiently beautiful and interesting to warrant extensive cultivation. Some authorities have considered it to be a variety of F. latifolia or even of the Persian F. Kotschyana, but the late Mr. J. G. Baker considered F. nobilis to be quite distinct from either of these. *B.*

LILIES IN OCTOBER.

Great as the value of Lilium regale is in July and August there will be no division of opinion as to the additional worth of its fine trumpet blossoms during the month of October, and it is glad news that such is one result of the opening up of bulb importation from New Zealand, an enterprise in which Mr. Amos Perry has already achieved success, and one which is calculated to be of far-reaching importance.

Seasons in New Zealand are almost the reverse of our own, and plants which ripen with us and go to rest in October or November are making growth just at that period in New Zealand and they will become dormant during our spring. Thus it is that in June Mr. Perry received a consignment of Lilium regale, which he at once planted in the open. Soil and atmosphere being warm, the bulbs started into growth rapidly, and in less than four months the bed carried a fine display of blooms. These bulbs, left in the ground, will doubtless accommodate themselves to British seasons and flower next year simultaneously with ordinary home-grown stock, but we have always imported vast quantities of Liliums, and now experiment has justified reliance upon New Zealand, a component of the British Empire, we may reasonably anticipate diversion of at any rate a considerable porportion of our business in Liliums, from Japan to the country whence we can receive bulbs which will keep our gardens cheerful and well-furnished right through the sombre days of autumn.

A further point merits attention; by potting bulbs when they arrive here and starting them in the cool shade of a northern aspect, very decorative and serviceable material may be provided for furnishing conservatories, well-nigh and probably quite until Christmas, and there is a great deal to be said for an imposing flower that will provide pleasing variation from the customary Chrysanthemums of late autumn and early winter.

The lovely, cream-white, yellow-throated trumpets of L. sulphureum (Wallichianum superbum) are also obtainable during September and October from shipments of bulbs arriving in May. Again, this is giving us an advantage over the hitherto customary importations of Asiatic bulbs which reach our shores in mid-winter. Long storage which means deterioration, and outdoor planting while the soil is at winter temperature, means possible decay, and, at best, weak, sluggish growth, and to start in pots, for transplanting in spring involves labour, frame or house room, and the twining of roots around the small compass of the soil-ball instead of their natural expansion.

When the New Zealand bulbs arrive in May the soil is already warm, and as in the case of L. regale, growth is rapid from the start. There is, undoubtedly, a great future for the use of Lilums produced within the British Empire. *A. J. M.*

AUTUMN-FLOWERING CROCUSES.

The genus Crocus consists of nearly one hundred species, about a quarter of which are autumn-flowering. They are natives chiefly of southern Europe and Asia Minor, but their habitat extends into the Caucasus and Central Asia.

The members of the autumn-flowering section are extremely valuable for giving colour at a period of the year when comparatively few bulbous plants remain in bloom and Crocuces are well adapted for naturalising in grass, for planting amongst low-growing, carpeting plants in the rock garden or borders and in the margin of the woodland garden where other growth is not too dense.

Their culture is simple and they flourish in light soils where the corms can root freely. Deep planting should be avoided, a covering of about two inches of soil being sufficient. To get the best results early planting is essential, and the corms should be planted not later than July to enable them to make roots before the flowers develop.

Probably the most useful of all the autumn-flowering Crocuses is C. speciosus, with large, handsome flowers of violet-blue, prettily veined. When well established, this species multiplies freely and a large group of it makes an attractive picture in September. C. pulchellus is another useful September-flowering species, producing lavender flowers richly veined with purple. C. longiflorus is a charming species producing soft, rose-coloured flowers of delightful fragrance in October, while C. medius, also an October-flowering species, has rich mauve flowers and is very attractive. C. zonatus is a beautiful, free-flowering species and amongst the best for naturalising in grass, where it multiplies freely. *A. P. C.*

ALPINE GARDEN.

GENTIANA DETOUSA.

This lovely European Gentian is still comparatively rare in cultivation although it was introduced into this country about the year 1759. Nicholson, in the first edition of his *Dictionary of Gardening* describes the species under the name of G. ciliata, but in the 1900 Supplement this is corrected and G. detousa is given as the proper name, with G. barbata as another synonym. In the *Kew Hand List*. 1925, G. barbata is referred to G. serrata, and G. ciliata is apparently considered distinct, but whatever the correct name, the species is one of the most beautiful of Gentians. The large flowers, which are of a glorious shade of blue, often measure three-and-a-half inches across, and are borne singly on elegant, terminal and lateral stems about nine inches in length.

The late Mr. Reginald Farrer wrote (in *My Rock Garden*): "G. ciliata, or detousa, is a notable beauty, but who is there that can grow it? It is a lowlander rather than an alpine; you find it by pathways and on open places in the valleys; and I strongly suspect it of either parasitic or biennial tendencies, or both. It has very large flowers divided into four; the colour is an indescribable rich pale porcelain blue, of that shade which for some obscure reason has been called electric, and each segment is fringed with soft, silky, blue hairs. I have tried this plant again and again, and again! I have never met with the faintest glimmerings of success."

At Bodnant, G. detousa has proved quite amenable to cultivation, and not especially exacting in its requirements. The best position for growing it is on a sunny border which does not become unduly dry during the summer. The species is certainly biennial, or at least it has proved so here, although short, basal growths on the stems of some of the plants, suggest that in common with many other biennials an occasional plant may carry on for a third year. Owing to its late season of flowering, it is not always easy to secure good ripe seeds, but we usually surmount this difficulty by covering a few plants with a hand-light.

The narrow, lanceolate leaves are certainly sparsely distributed, giving the plant a rather fragile appearance, but I see no reason to suggest that the species is parasitic. I think it highly probable that the chief cause of failure in the cultivation of G. detousa has arisen from the fact that visitors to Switzerland have collected plants in flower under the impression that the species was perennial, and have tried to establish in their gardens plants which, owing to their biennial habit, had almost completed their full span of life. *F. C. Puddle, Bodnant Gardens, Tal-y-Cafn, N. Wales.*

FLORISTS' FLOWERS.

SOME OLD-TIME CHRYSANTHEMUMS.

In the late "eighties" and the early "nineties," when Molyneux was a household word wherever Chrysanthemums were grown or known, there was a vast number of varieties of the flower; yet, how many of these old sorts are grown to-day? By diligent quest, one may find in a very few collections one or two of these old varieties. Since the war, I have grown the two old incurveds, George Glenny and Mrs. Dixon, and I know of a plant or two of the incurved—Japanese Edwin Molyneux, but these are isolated examples, and we may assume that the great majority of the Chrysanthemums grown and shown so well in the early nineties have disappeared for all time.

Of the varieties enjoying a great deal of popularity may be mentioned the following: Japanese—Madame C. Andiguier, Fair Maid of Guernsey, Jeanne Delaux, Val d'Andorre. Boule d'Or, Golden Dragon, Peter the Great. Elaine, Margot and Père Delaux; much favoured incurved varieties included George Glenny. Mrs. Dixon, Refulgence, John Salter, Lord Alcester, Jeanne d'Arc, Mr. G. Rundle, Hero of Stoke Newington, Queen of England, Golden Queen of England and Alfred Salter. These incurveds were noteworthy for their perfect form, although they were small as compared with present-day varieties. Of reflexed varieties, a section no longer recognised, Cullingfordii, King of Crimsons, Golden Christine, Chevalier Domage and Emperor of China found great favour; the Anemone-flowered Chrysanthemums, never a very large class, were well represented by Gluck, Acquisition, George Sands, Prince of Anemones, Princess Louise and Louis Bon Ami.

Good Pompons were Black Douglas, President. Madame Martha, Golden Madame Martha. Pygmalion, Prince of Orange, Centrillon and Rosinante, and it is most interesting to note that some of these liliputian flowers are to be found in present-day lists, and appear to have withstood the test of time better than their congeners.

Two other classes were favoured forty years ago, Anemone-Pompons, of which Regulus. Calliope, Marie Stuart and Perle were examples and a very small section known as fragrant Chrysanthemums; the single velvety Mrs. Langtry was credited with a powerful scent, and one plant would, it was claimed, perfume a large room, while other odorous varieties were Progne, Dr. Sharpe, Dick Turpin and Beauté des Jardins. These scented Chrysanthemums were slow to progress and eventually became lost to cultivation. The Single Chrysanthemum is a modern type, at least in the form now so popular, and another most valuable section of which little heed was taken forty years ago, is that comprising the hardy border varieties.

A great stimulus was given to the cult in 1892 by the appearance of Calvert's seedlings, yet few of his varieties are now known, although they are of a somewhat later period than many of those aforementioned; of this first batch from the eminent French raiser, were Madame Carnot, Australian Gold, M. Chenon De Léche, N. C. S. Jubilee, Madame E. Roger, still hard to beat in its colour, green; Mr. F. S. Vallis. Madame Paolo Radealli, President Bevan and President Viger.

The next milestone was the appearance of Mr. T. W. Pockett, of Melbourne, Australia, and this brings us to the modern period of Chrysanthemum-growing, and is outside the scope of this short note.

Many varieties of the early nineties were abnormally tall; Madame C. Audiguier, for instance, grew to a height of ten feet, and, ludicrous as it may seem, I have heard of a grower who kept a step ladder in his Chrysanthemum house so that visitors could inspect the blooms of this once popular variety.

Exhibiting has, of course, undergone many changes, some of which are even now subject for controversy, but we may at least safely claim for our present-day exhibitions that they are an advance, artistically, on their predecessors of three decades ago. *Ralph E. Arnold.*

ROSE GARDEN.

HARDY BUSH ROSES FROM CANADA.

Rose Agnes (Fig. 149) which was awarded the first Dr. W. Van Fleet Medal by the American Rose Society in 1926, was raised at the Central Experimental Farm, Ottawa, by the late Dr. W. Saunders. He crossed R. rugosa with Persian Yellow in 1900, and the seedling bloomed for the first time in 1902. As the illustration shows, it is double and very floriferous. The foliage is bright green and shows its rugosa parentage. although it is different to other hybrids of this species. It blooms earlier than any other double Rose in the garden at Ottawa and, except for aphis, is not troubled with insects or diseases. The flowers are pale amber and fragrant, with beautiful, well-shaped buds.

Grace, another of Dr. Saunders' seedlings, had Harrisonii for the male parent. This is not such a strong grower as Agnes and quite different in many respects. The foliage is smaller, the flowers have more petals but are a poor shape. It is very floriferous and the colour quite as remarkable as that of Agnes, and much more difficult to describe; perhaps amber on the edges, shading to apricot in the centre, gives some idea of it.

R. rubrosa (Fig. 150), as the name implies, is a cross between R. rubrifolia (female) and R. rugosa (male). The cross was made in 1920 and the seedling bloomed for the first time in 1923. The foliage and stems are almost as deep a red as in the female parent, though the green gives a bronze tinge to the leaflets which also show their rugosa parentage in their thick texture and large size. The shrub is vigorous, extremely hardy, and quite ornamental at all seasons, but particularly so when it is covered with the pink flowers which recall those of R. canina. *Isabella Preston, Specialist in Ornamental Horticulture, Ottawa.*

ROSE ANGELE PERNET.

Amongst Roses belonging to the Pernetiana section, this variety is one of the most desirable. It has a hardy constitution and produces handsome, large, bronze-green, shining foliage which is mildew-proof. The habit of the plant is excellent for a bedding Rose, being strong and erect in growth, carrying its flowers on stiff, erect stems. The flowers are freely produced throughout the summer; they are a charming combination of reddish-orange shaded chrome-yellow, the outside of the petals being suffused with gold.

The fine constitution, free and perpetual flowering habit, and its sweetly-scented flowers should make this one of the most popular varieties of Roses for garden decoration when it becomes sufficiently well-known.

ROSE PAUL'S SCARLET CLIMBER

This is one of our most delightful climbing Roses, and no collection should be without this gem. The vivid scarlet, semi-double flowers, shaded with bright crimson, are produced with the greatest freedom in large clusters. This Rose retains its colour much longer than others of the same shade and is not subject to burning during bright weather.

The flowers remain in good condition for a remarkably long period, and the plant continues to be an object of great interest from the middle of June onwards with occasional flowers during autumn.

With its clean, vigorous growth and free-flowering habit it furnishes the garden with a brilliant and magnificent display, and is useful either as a pillar Rose or for covering a pergola. *F. W. G.*

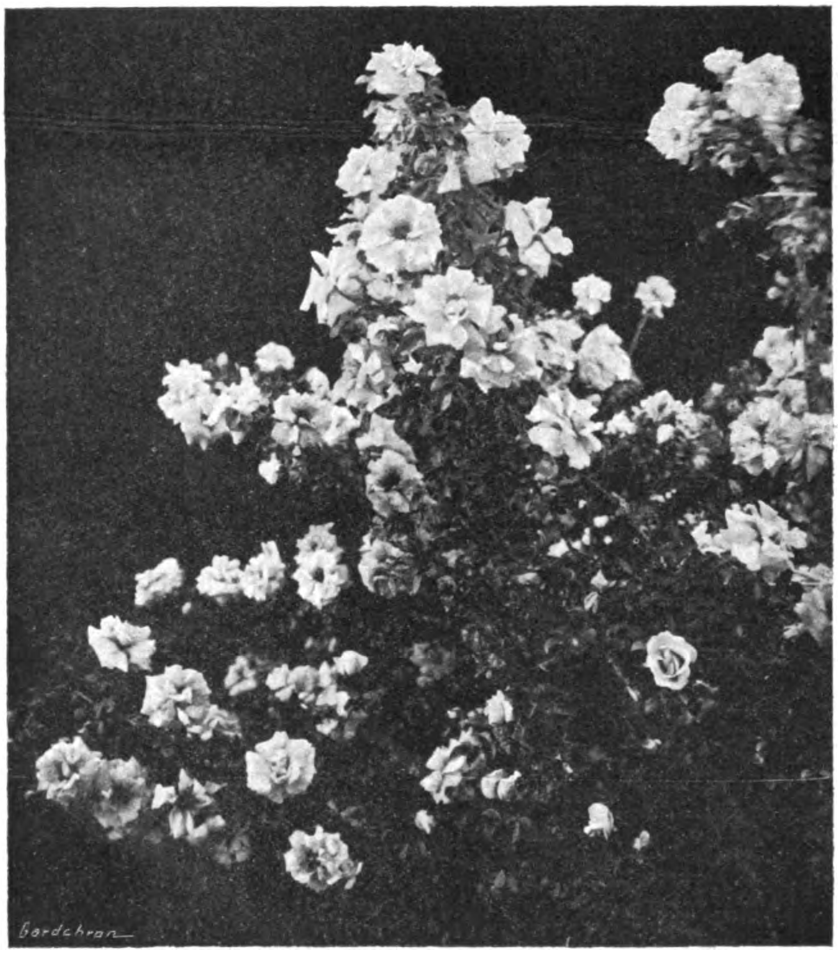

FIG. 149.—ROSE AGNES.

Awarded the Van Fleet Medal by the American Rose Society in 1926.

BLACK SPOT DISEASE.

In almost every district of the British Isles black spot caused by Actinonema Rosae, Fr., has been especially prevalent on Roses this season. Many cases of premature leaf-fall have been reported from Rose growers, and in every case I have examined Black Spot has been the cause. It is probable that climatic conditions have been favourable to the spread of the disease, because the fungus is always present to a greater or lesser degree, but it is not often that it makes such headway as it has done this season.

An attack of Black Spot is to be noticed about the end of June. It forms purplish blotches on the upper surfaces of the leaves, and spores are produced from the mycelium which seems to radiate from the centre of the blotches. The mycelium is entirely within the epidermis of the leaf so that spraying is useless, except to prevent the spores which are produced setting up the disease in new centres.

In some varieties of Roses the spots do not appear to increase very much in size, in others, or under certain conditions, they eventually cover the whole leaf; again, in some varieties the usual spots do not appear to be formed at all, but the disease appears as a dark, shaded portion about the main vein of the leaf, especially towards the petiole. When defoliation follows an attack of the disease new leaves generally appear from the side buds, and these new leaves are often attacked by mildew, Sphaerotheca pannosa, Lev. In either case, whether attacked by mildew or not, the production of young growth from buds which should remain dormant until the following spring, militates against a good show of Roses in the season to follow.

The disease not only attacks the foliage but also all the aerial portions of the plant. This is important, because it is frequently stated that the best method of control is to collect and burn all infected leaves and no mention is made of the infected wood. To collect and burn all infected foliage is certainly good practice because it does remove a certain amount of infection, but it is not sufficient. The wood of plants that are infected should be examined carefully at pruning time, when dark, blistered areas will be found. These areas would be better searched for during the growing season, as they seem to me to be more easily found then than at pruning time. The diseased portions may be cut out when found, or if numerous, noted and removed when the time for pruning arrives.

The best method of control is to remove all diseased material and burn it at once. Diseased wood as well as diseased foliage should be looked for and removed. A sharp watch should be kept for the first sign of an out-break in the following season; the young foliage which is attacked should at once be picked off and burned and the trees sprayed with a solution of potassium sulphide, using one ounce of potassium sulphide to three gallons of water. This treatment should be repeated until the disease is under control. *Somerset.*

FLOWER GARDEN.

OXALIS CERNUA.

When in the south of France in the spring I was much impressed by the beauty of Oxalis cernua, and I wonder if any grower in the milder parts of this country have had any success with it in the open. That it is an enterprising plant one is convinced when it is realised that, having accidentally found its way from the Cape of Good Hope to the south of France, it has spread throughout the whole length of that coast, to several of the larger islands of the Mediterranean and Northern Africa.

Where I saw O. cernua the plants were thriving in all manner of places, but mostly among the cool herbage of stream banks or the shady side of railway cuttings. The bulbs were often nearly a foot deep.

The average height of these plants would be ten inches to twelve inches, and the heads of very large flowers, in an exquisite shade of clear yellow, stood well above the delicate green of the handsome foliage. Farrer makes no mention of O cernua, nor can I trace any information regarding it in other authors. *J., N. Wales.*

HARDY FLOWER BORDER.

A DOUBLE THALICTRUM DIPTEROCARPUM.

New to me, and wonderfully effective, is a perfectly double-flowered form of Thalictrum dipterocarpum, which I recently saw growing and flowering in the nurseries of Messrs. Hewitt and Co., Ltd., Solihull, Birmingham.

The cream filaments or anthers, which fill the centre of the normal type, have broadened, and assumed the soft, violet-mauve tint of the outer sepals, making close, little rosettes, which, dangling on their slender foot-stalks are not rendered heavy by the doubling, but are, as is usually the case, far more substantial and lasting than the normal flowers. The plant is quite characteristic in its habit of growth, foliage and stem, and subject only to the possibility of satisfactory propagation, it is bound to become a favourite. At present, the flowers are sterile, and the multiplication of stock by division is necessarily a slow process. There is, however, something to be said for a plant which remains among rarities for the sole reason that it cannot be too rapildy propagated, and in choice collections the presence of a single well-grown plant of this double-flowered Thalictrum will be a great acquisition.

In regard to its sterility, one is reminded that for about the first dozen years of its life, the double form of Gypsophila paniculata was sterile, but quite unexpectedly several widely distributed plants simultaneously produced and ripened seeds, and now it is by no means uncommon to secure a crop of seeds from the double Gypsophila. From the first, the seeds reproduced from thirty to forty per cent of perfectly double-flowered plants, and that is about the proportion that still maintains. It may possibly transpire in the course of time that the plants of this double Thalictrum dipterocarpum will also produce seed, a proportion of which will return the true form of the parent; in that event we shall certainly secure a flower for cutting of great commercial value, but whether or not that may come to pass, it is still a certainty that this double form is a real treasure for lovers of choice hardy plants.

Careful and liberal cultivation will, undoubtedly, be necessary, but from personal observation I am disposed to the opinion that special soil preparation has, as is frequent, been a cause of failure with the normal T. dipterocarpum. The Fern-like foliage of the plant has apparently led many cultivators to imagine that its requirements are a light, loose and spongy soil, such as would be appropriately supplied to Ferns. Experience teaches otherwise, for it is in beds of made up compost of this description that failures have frequently occurred. A fairly strong loam, made porous with sweet, humus-forming material and some porous grit or rubble, produces the strongest growths, which in turn develop the stoutest crowns for future growth.

When Thalictrum dipterocarpum grows vigorously it enjoys liberal supplies of moisture; but an unhappy plant which struggles along, making only weak growth, easily succumbs to winter damp. I have found it somewhat averse to feeding with concentrated fertilisers, but greedily appreciative of hop manure, so long as the natural soil is inclined to the heavy side. *A. J. Macself.*

THE FERNERY.

A FERN-LOVER'S GREENHOUSE.

I **recently** saw three well-known pteridologists examining the Ferns in a greenhouse belonging to one of them. It is a small, unheated greenhouse, neither lofty nor broad, and the tallest of the trio struck an attitude which minimised the risk of lifting the glass from between the rafters; it looked difficult and uncomfortable to me, but it is wonderful what can be endured when interest is thoroughly absorbing, and surely no three men were more completely wrapt in the occupation of the hour than these, for they are connoisseurs of British Ferns, and the little greenhouse shelters what is probably the most complete collection of Polypodiums to be found in England, also a batch of young seedling Polystichums which, although raised from the spores of a single plant growing in the garden close at hand, are possessed of a subtle variation of forms and character so remarkably fine that even the long experienced experts were mildly bewildered at the apparently unlimited capacity for spontaneous variation in the progeny of the parent plant, and were unable yet to decide which of her children will prove to be the choicest treasure.

Poring over a finely-cut frond and using terms of doting admiration to an extent which carried conviction that after all the English is not a narrow language, at any rate, for the pteridologist, the trio appeared so absorbed that the mere onlooker wondered whether the rest of the Ferns would ever be looked at, but a half-turn brought a Polypodium into the line of vision of one of them, and with still another exclamation of rapturous delight he diverted his companions' attentions from the Polystichum and started the proud owner of this unique collection upon a string of anecdotes concerning the origin of this, perhaps the finest of the crested forms of the Polypodium tribe.

One felt a little sympathy for the lady who for the third time wedged in the remark that tea was ready and the toast was not improving by delay; but how could three connoisseurs of Ferns allow the best of the daylight to wane ere they had conned the lace-like fronds of Polystichum aculeatum gracillimum attenuatum, eulogised the incomparable softness of the tints in Athyrium Felix-foemina tricolor goringianum pictum, or searched for ripe spores on the sumptuous fronds of Adiantum capillus veneris imbricatum, the while our host for the hundredth time asked whether even the aristocratic and exotic Adianthum Farleyense is more beautiful, and answering his own question emphatically in the negative! Tea, at such a time is of very minor importance, and, as a matter of fact, the upshot of it all was an important engagement which one of the party would have been missed entirely had the 5.35 p.m. London express been quite sharp to time.

The thought which persistently occupied my mind as I witnessed the enthusiasm and undiluted pleasure of these three men, who are great among horticulturists, was that if only the thousands of young gardeners could catch this enthusiasm and be constrained to specialise in the study and cultivation of choice hardy Ferns, the whole profession of horticulture would take a great leap forward. There is surely no class of plants more capable of developing keen powers of observation and appreciation of fine points of distinction and quality than the British Ferns, and it is a class of plants which offers unlimited possibilities of service and unending interest in gardens of all sizes. The man who becomes expert in Ferns finds it easy to become expert in other classes of plants, as witness the versatility of Mr. W. B. Cranfield, Dr. F. W. Stansfield and Mr. Tom Henwood, the trio with whom I spent a most enjoyable afternoon among the marvellously beautiful collection of Ferns growing in the little garden of the last named at his home in Reading. *A. J. Macself.*

INDOOR PLANTS.

WINTER-FLOWERING BEGONIAS.

Begonia socotrana was introduced from the island of Socotra in 1880 by the late Professor Sir Isaac Bayley-Balfour, Regius Keeper of the Royal Botanic Garden, Edinburgh. This, in itself, a beautiful winter-flowering species, has proved of immense importance as the progenitor of our present day races of winter-flowering Begonias.

From 1883 onwards, Messrs. J. Veitch and Sons produced many fine winter-flowering varieties by intercrossing B. socotrana with various tuberous-rooted varieties of Begonia from the Andes of South America. Some of the most recent hybrids resulting from these crosses are Exquisite, Fascination and Optima. The leaves of these hybrids tend to resemble those of the Andean species rather than those of B. socotrana. Though they are very beautiful plants, they are not very generally grown, as their cultivation presents some difficulties.

Monsieur Lemoine, of Nancy, in 1892, crossed B. socotrana with the South African B. Dregei, the resulting hybrid being B. Gloire de Lorraine, of which there are now several varieties, including some of American origin, such as Glory of Cincinnati and Mrs. Peterson. These are now some of the most popular and easily-grown plants for winter decoration. *J. Coutts.*

SOLANUM WENDLANDII.

Solanum Wendlandii is one of the very best of warm-house climbers; it has enormous terminal clusters of bright blue flowers which under suitable conditions, are very freely produced.

This Solanum is best planted in a well-drained border of peat and loam. The plant revels in warmth and sunshine, although it will succeed admirably in a cool greenhouse, but it is never so happy and exuberant in a cool temperature. When dormant, the plant may be pruned fairly hard and should be given a period of comparative rest. Cuttings root very easily and provide the best method of propagation. The flowers are fairly persistent and last well in a cut state.

It is the best of the Solanums and a very accommodating plant, but it is not common in gardens, although a good many years have passed since its introduction from Brazil. *Ralph E. Arnold.*

ORCHID NOTES AND GLEANINGS.

LAELIA PUMILA.

Mr. J. Beanland, Bradford, sends for identification a fine flower of the true Laelia pumila produced by one of the plants growing on a small branch of a tree brought by a friend from Brazil. The flower, which is four-and-a-half inches across, has petals two inches in width; both sepals and petals are coloured bright rosy-mauve.

The base of the lip is rose colour, the expanded front bright purple with a blush white blotch at the front. The disc is chrome-yellow with yellow ridges extending to the base.

Many hybrids of L. pumila have been recorded, and as hybridists recognised the error of including L. Dayana as a variety and established it as a distinct species with its hybrids recorded under it, confusion in that direction has been obviated. *J. O'B.*

NOTES FROM EDINBURGH.

The recent summer-like weather has had a marked effect in prolonging the flowering period of many plants this season, and the fresh and green appearance of foliage does not suggest the month of October.

This has been the means of deceiving such plants as Meconopsis integrifolia, M. Prattii, M. simplicifolia and causing various species of Primula and Rhododendron to flower prematurely when they ought otherwise to be making preparations for their period of quiescence. Those who make a special feature of harvesting seeds will in many cases be disappointed should early frosts occur, and no doubt Nature's undue kindness will have a detrimental effect on some plants later.

Colchicum speciosum and its varieties continue to flower in border, rock garden and around the pond side, giving a bright display. Patches of Autumn Crocus, C. speciosus, are at their best under trees and among the grass. They are to be recommended for planting along the sides of rock garden paths. C. zonatus might also be included here.

In the capitate section of Primula, P. capitata and P. pseudo-capitata continue to flower with great vigour. These delightful Chinese species are most interesting, with dwarf rosettes of dark green foliage, and bearing flat heads of dark purple flowers on erect, mealy stems. When planting it is well to remember that thickly planted groups give the best effect when in flower.

Planted among Rhododendrons and in many cases exceeding them in height, massive spikes of Lilium auratum represent to the full the handsome qualities of the genus. There would be no feelings of regret by those who have not tried this fragrant, easily-grown species if a few good bulbs were acquired.

Large groups of Kniphofia (Torch Lily), natives of South Africa, constitute one of the features of the garden at this time. Many and varied are the species and varieties grown. Their heights range from two feet to the tall, graceful specimens of from five to six feet high. A garden variety particularly admired is K. Uvaria John Benary which has magnificent, brightly coloured spikes and is well worth growing The genus as a whole is very useful and effective for autumn decoration.

A tall, late-flowering plant from China, Aconitum Wilsonii, is very showy. Growing in large masses it is outstanding as a tall plant for herbaceous borders and may be used to great advantage in the wild garden or some other corner, having a suitable background. The flowers are of a pale blue colour and very handsome.

Although an old plant in cultivation but nevertheless admired by many lovers of climbing plants, Polygonum baldschuanicum has continued to flower for five or six weeks, almost smothering a Crataegus twenty feet high. Its twining shoots have reached the top and are covered completely with trusses of beautiful, pale-coloured flowers which make a complete picture. It adapts itself to almost any situation and is at home when able to entwine itself in some neighbouring tree.

The uncommon Chinese plant, Spenceria ramalana, growing in a dry open situation in the rock garden attracts attention. Racemes of soft, lemon-coloured flowers rising from among the glossy Potentilla-like foliage are very handsome. It is of easy culture and propagation can be effected by division or seeds. From among the late-flowering herbaceous groups a Texan plant worthy of note is Salvia farinacea. Its pretty, violet-blue flowers are in whorls on the stem and not only the flowers but the stem is handsome, having a coating of white meal diffused with violet extending considerably below the flower area.

Numerous trees and shrubs are rich in autumn tints and many give added interest by the production of brightly-coloured fruits. Good examples of this are found in the following genena Berberis, Viburnum, Skimmia, Cotoneaster, Crataegus and Pyrus. Berberis aggregata var. Prattii has excelled in clusters of bright red fruits which in the autumn sun are most beautiful. Viburnum foetidum can compare favourably with any of the species of that genus and when covered with crimson fruits it is additionally attractive. The same may be written of Skimmia Fortunei and S. japonica. Cotoneaster frigida is one of the outstanding members of its family. Nothing looks prettier than a large plant densely crowded with long, pendulous branches carrying brilliantly-coloured fruits; its usefulness as a decorative shrub cannot be disputed. Pyrus Aria obtusata and P. rotundifolia are very popular trees of the Arboretum. In the autumn, when their yellow fruits ripen, they are very much admired, and at the same time provide a veritable restaurant for the countless birds which greedily devour the luscious fruits. *A. McCutcheon.*

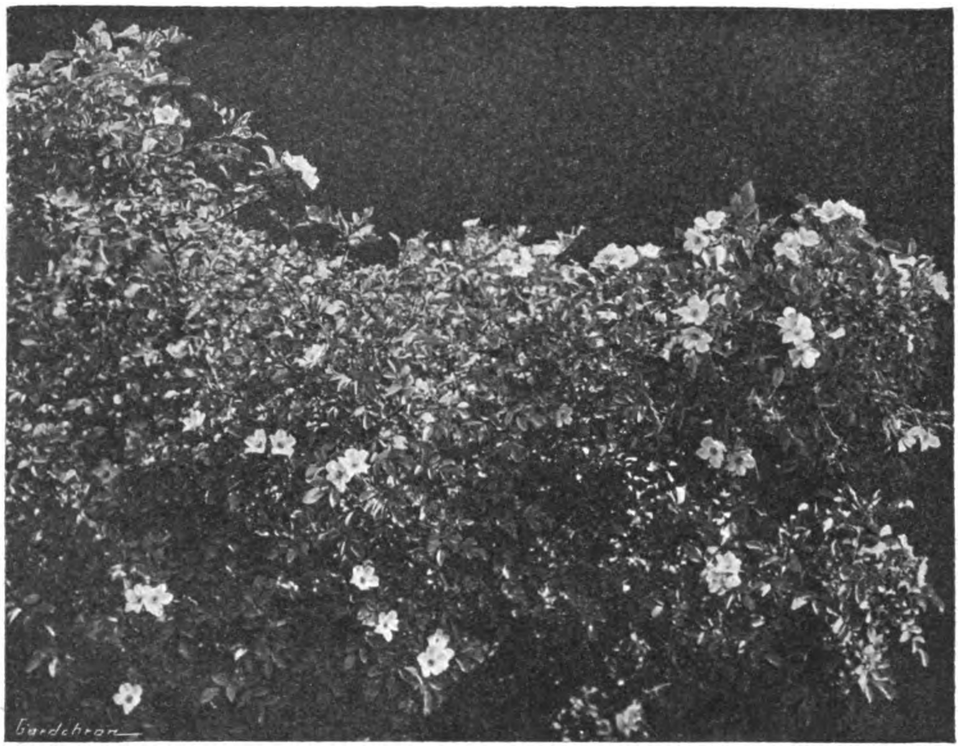

FIG. 150.—ROSA RUBROSA (R. RUBRIFOLIA × R. RUGOSA).

(see p. 327).

NOTES FROM KEW.

In the Oak collection Quercus alba is the most attractive species in its gorgeous autumn colouring. The trees are only young, some twelve feet in height, but the whole of the leaves are rich crimson-scarlet. The White Oak is a native of the eastern and southern United States, where it grows up to one hundred feet or more in height. Described as one of the most beautiful American Oaks, evidently our climatic conditions do not favour its growth. Though said to have been first introduced to Britain in 1724, there do not appear to be trees of any considerable age or size in this country.

Rhus cotinoides is another native of the south-eastern United States, remarkable for the rich colouring of the leaves before they fall in autumn. Shades of rich yellow, orange-scarlet and deep red provide a picture of beauty it is easier to imagine than describe on paper. Forming a large shrub or small tree fifteen feet to twenty feet, or more, in height, the Chittam Wood, as it is known in America, was first introduced to British gardens by Professor Sargent of the Arnold Arboretum in 1882. Most members of the Rhus family provide brilliant colour in the autumn by reason of the rich tints of their foliage.

The Sorrel Tree (Oxydendrum arboreum), an ally of the Andromedas, is a deciduous tree native of eastern North America. Native trees attain a height of fifty feet to sixty feet but the tallest recorded trees at Knap Hill Nursery, Woking, are not much more than half this height. It belongs to the Natural Order Ericaceae and thrives under the same conditions of soil as the Arbutus, Andromedas and Rhododendrons. The Sorrel Tree is a useful late-flowering tree having attractive panicles of white flowers produced during July and August. The tree has a further period of conspicuous beauty in October, when the leaves assume rich shades of yellow, orange and red before falling.

Another tree of the eastern United States, a specimen of the Tupelo (Nyssa sylvatica), has been for a fortnight the most attractive tree at Kew, but alas! boisterous winds have sadly denuded it of leaves. Light, dark and intermediate shades of glowing red combine to make it one of the loveliest of all trees in autumn. It grows to a height of one hundred feet in a wild state. According to Elwes and Henry, in *Trees of Great Britain and Ireland*, there is a specimen at Strathfieldsaye, eighty feet in height.

Amelanchier canadensis—the June-berry of American horticultural literature—is a widely distributed tree of eastern and central America. As it extends in the north to Newfoundland and through Canada to the southern United States, it is not surprising to find the tree varying under cultivation. In fact, quite a number of the most distinct forms have been given specific or varietal names by various botanists. One period when the differences are noticeable is as the leaves change colour in autumn; in the best forms the foliage turns a rich light red but there are some with attractive mixtures of yellow and red, whilst the autumn foliage of others turns a rich yellow. *A. Osbcrn.*

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CINTRA-MONSERRATE.

ANY description of the gardens of Monserrate should be preceded by a brief account of the setting. Monserrate (Sir Herbert Cook's estate) is near Cintra, and Cintra is an assemblage of summer villas seventeen miles north-west of Lisbon, perched on the flanks of the Serra de Cintra, a spur of the Serra d'Estrella range just short of its termination in the sea at the famous Rock of Lisbon. The Serra here forms bold summits of which one is the Pena (1,700 feet). These summits consist of huge blocks of granite resting on each other like vast dolmens without any apparent cementing substance between. The lower slopes are buried in Pine and Oak woods, whilst above is the bare, bush-strewn Matto and these fantastic rocks.

Shady roads, steep and undulating, penetrate between the villa gardens and lead to the various view points and objects of interest. These roads run between high walls, tinted green and grey and yellow with the Mosses and Lichens which everywhere encrust them. Against this background, the prominent flowering plant, in April, is Erigeron mucronatus (the Vittadinia of the gardener), its white and rosy colouring showing to perfection in the subdued lighting which filters through the maze of trees. Anyone knowing this plant only as it grows in our gardens at home would never suspect how completely it dominates the roadsides here—perfect alike in its form and colour; and the odd thing is that it is not a Portuguese plant at all, but, originating from Mexico, has run riot everywhere.

A second plant, the Periwinkle, contributes in equal degree to the setting, but in another way. The flowers of this plant form limitless constellations of purple stars which seem to float perhaps two feet from the ground level. This is neither our Vinca major nor V. minor, but V. difformis, whose flowers are a little more starry than those of their allies and are brightened by just a hint of added red in their purple. Another element is the presence everywhere of epiphytes on the old stems and branches of many trees—Polypody, Davallia canariensis, Aspleniums and Umbilicarias. Everywhere is a plexus of trees of amazing height assembled from all quarters of the earth to form an *ensemble* altogether indefinible.

The garden at Monserrate lies some three miles out of the town and consists essentially of a cup on the side of the Serra, deep, and ribbed with buttresses, with gulleys between. One buttress in particular projects far into the concavity where it forms a knoll or platform, upon which stands the residence. A great feature is a cascade falling (apparently) hundreds of feet into the open cup, and utilised to form a small lake or series of lakes before it flows away into the distant landscape. On the sides and floor of this concavity trees have been planted, trees from all the world over, especially from South Africa, South America, Australia, New Zealand and China, as well as Europe. The groups represented include Conifers, Palms, Casuarinas, Oaks, Cycads, Tree Ferns, Bamboos, Proteaceae, Acacias, Eucalyptus, Dasylirion, Magnolias, Agaves and their like. Monserrate is the meeting place of the temperate and sub-tropical floras.

Access to this plexus of beauty, mystery of interlacement, and unique plant achievement is made easy by an elaborate and well-planned system of paths, steep and sinuous, paved with small stones and diversified with stone furnishings of varying dates. Sometimes these paths are fringed by an undergrowth of Camellias and Rhododendrons, like Hazels under standards, whilst presently we come to a bunch of Tree Ferns, and to look up at their plumy crowns of tender green, twenty feet to thirty feet above, silhouetted against the sky, was a revelation to one who had seen Tree Ferns only from the gallery of the Temperate House at Kew.

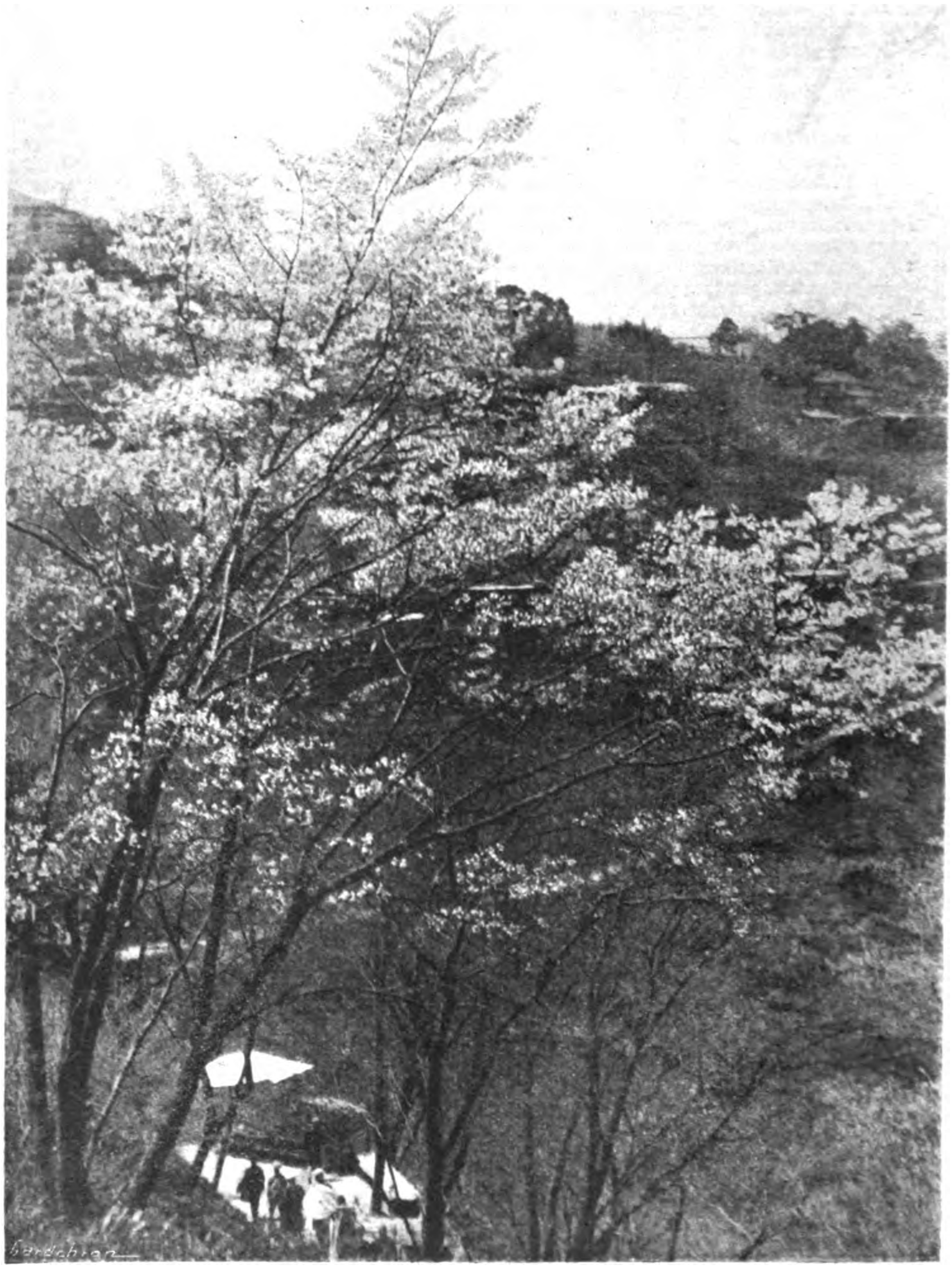

FIG. 151.—THE HILL CHERRY OF JAPAN AT YOSHINO.

(see. p 331.)

Whether all this riot of plant growth is good to dwell amongst can only be decided by actual experience; as a spectacle for the gardener, botanist and plant lover of more northern latitudes it is an eye-opener and liberal education. On this always sloping ground the crowns of the trees rise high above the observer's eye, whilst the origin of the stems is far below. To gauge their height and depth is impossible, hence the vertical factor is inevitably exaggerated. Nor are we confined horizontally.

Gaps and vistas relieve the eye of any oppressing sense of solid jungle. These lead out to the plain beyond with its vineyards, and to the distant sea. Or inward, one sees the individual trees projected against a hillside of virgin forest of Cork Oak, which covers the amphitheatre round about. We are in a land of illusion where distances, horizontal and vertical, are indeterminate.

One thing is evident, there is no rest for the gardener here. His hidden but ruthless hand must always be at work. Three generations of the Cook family have worthily upheld the fine traditions of this unique property since its foundation as a botanic garden in 1856. It is always open to visitors, the fees for admission being paid over to a local hospital.

The conditions which make such a garden as this possible are probably somewhat as follows. Portugal has an ample rainfall, perhaps sixty inches on the coast. This abundance permits of irrigation being operated generally. Further, the country enjoys great sun power as testified by the very large amounts of salt obtained by evaporation from the salt-pans at the mouths of the rivers. These two factors must promote a rapid transpiration current, whilst the high, yet equable, mean temperatures (av. mean temp., 61.3°; Jan. 50.2°, July 70°) must be very favourable to growth. To these must be added one local to Cintra, viz., a very fertile soil in the interstices of the granite boulders. *F. W. Oliver.*

THE HILL CHERRY OF JAPAN.

> "And the path before me is white with the soft, thick, scented snow of fallen petals."
> *Lafcadio Hearn.*

There are six or seven more or less distinct species of true Cherries growing wild in Japan, and of these the Hill Cherry or Yamazakura (Prunus mutabilis, of Miyoshi) is the commonest and most widely distributed. The literal translation of "Yamazakura" is, of course, "Mountain Cherry," but as the prefix "Yama" is loosely used by the Japanese to designate a wild or feral species we need not be too pedantic on this point. "Mountain" in the present case, would certainly be a misleading name, as it is essentially a tree of the foothills, never reaching over two or three thousand feet above sea-level; beyond this height, it is replaced by other species more worthy of the title.

The Hill Cherry is a great favourite with the Japanese themselves and is the prevailing species at the three most famous "Hana-mi" or "Flower-viewing" resorts—Yoshino, Arashiyama and Koganei. Although unquestionably wild in many of the woodlands there can be no doubt that it has been extensively planted in these three districts—indeed, at Yoshino one passes large nurseries of seedlings by the wayside, and it is only fair to presume that these are being grown to replace the trees that have died or to enlarge the existing groves.

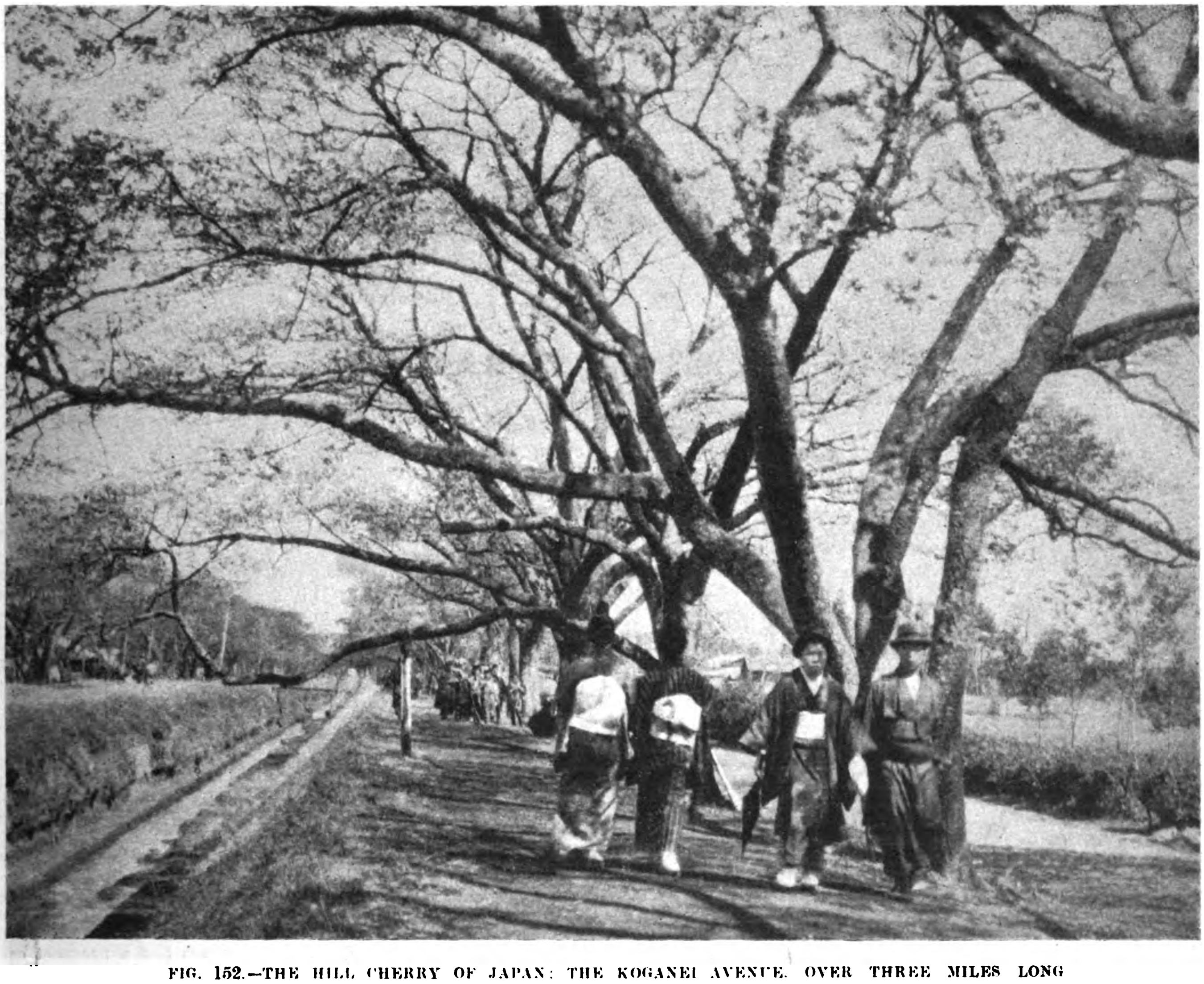

FIG. 152.—THE HILL CHERRY OF JAPAN: THE KOGANEI AVENUE, OVER THREE MILES LONG

As its specific name suggests, the Hill Cherry is a very variable species, but in its best forms it is a stately and extremely handsome tree. The individual flowers are not big, but in old specimens (it does not flower well in youth) they are very freely borne and bedeck the branches with close clusters of blossom. Their opening happily coincides with the appearance of the foliage, and herein, perhaps, lies their chief charm. The unfolding leaves are usually of a clear copper-red colour, translucent in the sunlight, with a bright, burnished surface. Lovely in themselves, they are exquisitely beautiful as a foil to the dazzling white of the blossom. At a distance, these two tones blend and produce a massed effect of soft tawny-pink which is altogether delightful.

With the trees in front of me, it was easy to understand the sentiments of a Kioto friend: "We Japanese," he declared, "like the single Yamazakura best because it resembles a simple country girl—the heart and spirit of real Japan—with her strong, healthy, peach-like complexion. The double sorts are too pretentious too brightly coloured, too like the artificiality of townspeople."

Yoshino-yama, which is situated in a low mountain range of Yamato Province, in central Japan, may fairly lay claim to be the Mecca of all Cherry worshippers and, reckoning myself in this category, I hied myself thither one bright and sunny day in April last. Throughout the flowering season there appears to be an immense daily pilgrimage to this more or less inaccessible spot; indeed, it is said that over twenty-five-thousand people visit Yoshino in a single day, and judging by the crowded condition of the cars and the incessant stream of sightseers that poured into the district during my visit, I can readily accept this figure. Osaka, Kobe, Nara and Kioto all supply their quota and contribute to this amazing concourse of holiday-makers.

I intentionally refrain from calling them "flower-lovers," for I am convinced that the vast majority go there merely to make merry and not for the sake of the flowers, much as our own crowds go to Epsom Downs on Derby Day, not to see the racing, but merely as an excuse for a spring-time outing.

The Japanese sightseers consider it a necessary part of the entertainment to imbibe freely of their national beverage *sake*, and this intoxicant seems to engender a friendly feeling of tolerance and, instead of being aggressive, the men become affectionate with one another, rather hilarious and extraordinarily vociferous. They form a good humoured crowd and evidently seize the occasion to make merry and enjoy themselves to the full.

Since the seventh century this locality has been famed for its Cherry trees, and now the whole place seems given over to them. They are planted closely over the hillsides (Fig. 151) and all along the roadways and in the temple grounds. The wayside booths sell Cherry-wood sticks, Cherry-wood boxes, Cherry-petal sweets, and perhaps a dozen other products of the tree; even the umbrellas, sun-awnings and ricksha-boy's blouses are stamped with a conventional five-petalled design of the flower, showing the popularity of the Hill Cherry with the Japanese public.

With a few exceptions all these Yoshino trees are the wild Hill Cherry—the true Shiro-Yamazakura of the Japanese. There are two forms (or possibly species) to be found amongst them. The commonest and by far the most beautiful is the one that has its young foliage of a reddish colour with more or less completely glabrous leaves. This form opens its flowers at least a week or ten days in advance of the other, which may also be distinguished by having greener and more pubescent young foliage.

It was from Yoshino that in 1735 the Shogun Yoshimune ordered ten thousand trees to be removed to Koganei, a village about fifteen miles from Tokyo. Here they were planted as a long and perfectly straight avenue (Fig. 152) on either side of a canalized stream. The site seems to have suited them well, for they have since formed some of the finest examples in Japan, with broad, spreading crowns thirty or forty feet in height. Many of the original trees are said to be still standing, and from the aged and decrepid appearance of some of them, I see no reason to doubt this statement. At Koganei a society has recently been formed to protect the trees—a very necessary precaution for the Japanese are everywhere fond of tearing off branches for indoor decoration, a reprehensible practice which no doubt explains the mutilated appearance of so many of their flowering trees in public places.

Although it has been asserted on good authority that a proportion of these Koganei trees belong to the species known as Sargent's Cherry (Prunus sachalinensis), I have no hesitation in saying that this is an error; this beautiful native of the more mountainous and northern districts is not found here. As a matter of fact Sargent's Cherry does not thrive in the neighbourhood of Tokyo and is only kept alive with difficulty in the Botanic Gardens of that City.

Considering its easy cultivation and great beauty it is really surprising that Prunus mutabilis, or the Hill Cherry of Japan, is still virtually unknown in England. I introduced a number of plants six years ago, and I believe these were the first to reach this country. A grafted garden form may be found at Kew, but mine are the true Yamazakura—"the simple country girl"—that is the heart and spirit of Japan! *Collingwood Ingram.*

AUTUMN TINTS.

It would be interesting to know what are the essential factors underlying the brilliance of colour in autumn-tinted subjects. That comparative dryness is a contributory factor does not seem to be borne out in the present season, for seldom have autumn tints been so slow to appear, even in those subjects which have a tendency to assume rich colour in autumn regularly.

It is not unusual for Amelanchier canadensis, generally one of the earliest to turn colour, to do so in August, but it showed no sign of turning till towards the end of September this year, and is even now, at mid-October, not so brilliant as it usually is. I have seen Crataegus Crus-galli, the Cockspur Thorn, a brilliant scarlet by the end of September, but at mid-October this year scarcely a leaf had turned colour.

Large plantations of Azalea mollis are usually a striking mass of tinted foliage at the present season, but this year there is very little tendency for these colours to develop. Acer campestre, A. Ginnala, Prunus serotina, Rhus Cotinus, R. glabra var. laciniata, Viburnum Opulus, Parrotia persica and Vaccinium pennsylvanicum have changed colour, but there is not the same intensity of colour that one often sees in these plants, while Euonymus alatus, E. europaeus, Spiraea Thunbergii, Gleditschia triacanthos, Liquidamber and the Tulip Tree, all of which usually colour freely, remain quite green.

Is it possible that the lower strata of soil is so dry that the plants have difficulty in absorbing sufficient moisture to enable them to elaborate these transformations? *A. P. C.*

TREES AND SHRUBS.

QUERCUS CERRIS.

That the Turkey Oak is capable of developing into a very handsome tree is well-known, and I was especially interested recently in many fine specimens of this species growing at Busbridge, in Surrey.

As park-land trees their aspect was very fine, and I would like to emphasize their beauty for this purpose to landscape planters. The peculiarly deep green colouring of the much-cut leafage, with its somewhat thin disposal on the annual shoots, is well adapted to display, with great effect, the graceful stems and branchlets.

A very near view is necessary to note the prettiness of the mossy cups in which the fruit sits so snugly. Some specimens, measured by means of a staff, would not be less than ninety feet in height, and they possessed a good trunk of thirty to forty feet. I am not acquainted with the merits of Quercus Cerris as a timber tree, and wonder if the wood is as durable as that of the ordinary Oak, than which I imagine it would be a much faster grower and more clear of knots.

It is possible that the imported Oak timber from the continent, with its comparative immunity from knots, may often be of this species. A curious fact was noted; numbers of evidently self-sown saplings of the Turkey Oak were springing up, and although the ordinary English Oak abounded in good specimens, very few saplings of this were observed.

Is it possible the mossy cup of the acorn of the former proves a protection against rodents and birds when the seed reached the ground or does the acid of this species prove a greater deterrent)? No intermediate forms were discovered, so one concludes that these two Oak species do not frequently cross. The geological formation of this district is what is known as the upper greensand; the surface soil being of a warm open texture, overlying the Bargate rock, is therefore perfectly drained. *E. J. Platt.*

NOTICES OF BOOKS.

"The Days of My Life."*

In the preface of this book, Mr. C. J. Longman explains that Sir Henry Rider Haggard completed his Autobiography on September 25, 1912. It comprises the first fifty-six years of his life, for he was born on June 22, 1856, and died on May 14, 1925, and it carries us through his South African days on the staff of the Governor of Natal, and shows us his work under Sir Theophilus Shepstone in the Transvaal.

We are then taken back to England, where, having married, and after a brief interval of farming in South Africa, he commenced his literary career, which in the eyes of the majority of present-day people, is that which will make his name live. This "romance writing," as he calls it, was, however, not congenial to him. It was undertaken as a means of increasing the educational facilities for his children, and from this point of view it became, after some early disappointments, increasingly remunerative and helpful.

But novel writing was not his real aim and ambition. Although gifted with imagination and able to put his thoughts clearly into words with exceptional rapidity, as is shown by four novels being completed between January, 1885, and March, 18, 1886, in addition to his work at the Bar, he by no means lived to write fiction. From 1891 onwards, after the loss of his son, his zest for writing stories diminished, and we learn that "active rather than imaginative life" appealed most to him. This resulted in his writing *Rural England*, and *A Farmer's Year*, and other books representing the then prevailing conditions of English and Danish agriculture.

The first-mentioned of these books he describes as "the heaviest labour of my laborious life," the two massive volumes being amusingly commented upon by his young daughter who exclaimed: "My word, Dad! If I had written a book like that I should spend the rest of my life sitting to stare at it!"

Horticulture and agriculture were pre-eminently the industries that he wished to promote, and whether it was by encouraging some juvenile garden enthusiast by the gift of a rare African Lily (an act gratefully recalled by the writer of this review) or serving on Royal Commissions with a view to stimulating land cultivation, co-operation, reduced railway rates for produce, or better country housing conditions, all was equally a labour of love to him.

Thus did he serve his country as Commissioner to report on the Labour Colonies established by the Salvation Army in the United States. He also was nominated a member of the Royal Commission on Coast Erosion and worked ardently for afforestation.

His main object was to retain a country-bred population. In a letter written to Mr. Asquith (now Lord Oxford) in 1903, he wrote: "As regards the lack of rural cottages I agree that this is one of the great causes of the exodus to the towns. But the lack of prospects is a greater. If labourers had a prospect of rising and could do well on the land as small holders they would soon get cottages, for then they could pay a rent at which these would be remunerative to build. Or more probably they would build their own, as at Evesham." . . . .

"What will it benefit us to gain the whole earth if we are to lose our country-bred population? Again, with all this outcry about our danger from lack of food, why not take the obvious remedy of growing most of it at home? as we could do in my judgment, and without Protection."

The Days of My Life is a record of many-sided interests, literary, social, political, agricultural; it contains letters from famous men of different professions, and thus it is certain to appeal in one way or another to the taste of most readers. It paints vividly, enlivened by delightful touches of humour, the work of an exceptionally active life, not perhaps a supremely happy one, as the course pursued was controlled by circumstances, and not in its entirety selected by choice.

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* *The Days of My Life*, by Sir H. Rider Haggard. Published by Messrs. Longmans, Green and Co., in 2 vols., 28s. net.

In the changing conditions of our English life it is hard to form a correct estimate of the position which future generations will assign to Rider Haggard's name. If it should be that with the decrease of large estates, more small people will own and cultivate land, if country conditions are brightened by the establishment of public electric light stations and the increasing activities of the Women's Institutes inprove the social position of the countrywomen, then Rider Haggard's ideal of retaining a country population will be fulfilled. His admirable work as a writer of romance will thus be eclipsed and it will be amidst the ranks of patriotic agriculturists that his name will be praised. It will be with the band of famous pioneers, mostly springing from or working in East Anglia, with Tusser, Coke of Norfolk, John Ellman (representing Sussex), and Arthur Young, that he will be gratefully remembered by his countrymen. *Wolseley.*

The Strawberry.*

The author of this work wrote a book on *The Potato*, published by the same company as this one in 1918. He was then Assistant Agronomist, Cornell University, which accounts for his wide knowledge of the requirements of the vast extent of the United States and Canada, with their varied climatic conditions and differences of soil. He is now a fruit grower and nurseryman. In the introduction he states that Strawberry and Fraser are synonymous; Frezier introduced the Chilean Strawberry to France in 1712, from whence it reached England in 1727. About 1800 the Pine Strawberry, a development of the Chilean plant was introduced from Europe to America, and from it have arisen nearly all at present in common use in America. The European plant was small, but the fruits were large, so C. H. Hovey set about crossing Pine with a more vigorous American Strawberry, and The Hovey was the result, and the sensation of its time. Amongst the forty-nine varieties described at the end of the book not one of them is British. All are of American origin, and only certain varieties will grow in certain parts of that country. That is a peculiarity of the Strawberry in this country. Many of the varieties will only grow and fruit profitably in certain soils and districts or parts of Britain.

The author states that Strawberries prefer an acid soil, and where found on chalk formations they grow in the earthy residue from which the chalk has been dissolved and washed away. Strawberries in America are most extensively grown as an intercrop in young orchards of Apples, Pears, Peaches, etc. The fruits of the warmer parts of the south are shipped to the more northern parts so that there is no competition in the markets, unless a northern farmer conceives the idea of forcing them in greenhouses. A plant can mature a crop four times its own weight under favourable conditions. Climate and environment have a peculiar effect upon the form of the fruit; in Florida, the variety Klondike bears conical fruits, but further north they become globular, while in California they produce a neck.

In respect to manures, farmyard and other manures that supply humus are the most useful; dried blood and bone-meal have proved serviceable in many places; nitrogen only produces runners. The author states that there is no financial return, either in America or England, from fertilisers! The two popular methods of growing Strawberries are on ridges, and in matted rows, one to four feet wide, most of the runners being allowed to grow at six to ten inches asunder, or as they like. Half of a matted row may be cut away by means of a horse-drawn machine leaving a row of matted plants, and by this means a matted row plantation may endure for seven years or more, thus saving labour and expense. Fifty years ago and more something like this method of cultivation was practised in some parts of Scotland, the spade being used instead of the machine for reducing the width of the rows. Irrigation and mulching are serious operations in America.

In the breeding of new varieties pistillate plants are used as mothers, because the progeny is more productive than where hermaphrodite plants are used for the purpose. Good dessert varieties for home use have yet to be produced. The book is interesting throughout, contains eleven illustrations, is well-edited, and could be turned to useful account in this country.

THE CONTROL OF RED SPIDER.

In many glasshouse districts this year growers have suffered considerably as a result of the ravages caused by red spider on a variety of indoor crops. Whereas in the past this pest has been associated with Vines, Cucumbers, Carnations, etc., reports show that it has, during the past two or three years, devoted its attention to Tomatos. We are now confronted with the fact that this mite is capable of rapidly adjusting itself to new conditions and plants, and it is not saying too much that we may anticipate further trouble in this direction. The infestation by this pest has been so serious and the check upon plant growth so complete in consequence, that in quite a number of cases it became necessary to pull out the crops and replant as early as July. Until the advent of the Lea Valley Experimental Station's special grade of naphthalene for "broadcasting," there was no really effective fumigant which could be considered to give fairly complete control. The conditions and technique of application of this fumigant have been fairly well developed during the past two seasons so that Cucumber growers owe a debt of gratitude to the station for the work that has been carried out in their interests. The "broadcasting method" has certain disadvantages, however, when applied to other plants, such as Tomatos, Carnations, Vines, Smilax, Asparagus, etc.

The conditions obtaining in a Cucumber house are such that it would be positively fatal to attempt to maintain them, for instance, in a Carnation house. It is on account of this that the "broadcasting method" has not produced such good results when applied to other plants where the conditions referred to would be detrimental. As a consequence, last year the writer decided to attempt the vaporisation of naphthalene by means of lamps, and it very soon became apparent that to do this successfully it was necessary to design a special vaporiser for the purpose. The work has necessitated the examination of many types of lamps using various materials for purposes of fuel, and the carrying out of trials under varying conditions of temperature, humidity, soil, plant growth and climate.

The first and foremost problem was to obtain a lamp which could be produced commercially at a price economic from the grower's point of view, and which would burn for a sufficient length of time and generate enough heat to vaporise a given quantity of the fumigant in not less than twelve hours. Having accomplished this, the second problem was to determine the requisite number of lamps necessary to vaporise enough naphthalene to maintain a concentration of vapour for a length of time sufficient to be toxic to red spider, without in any way distressing the plants under treatment. This problem has necessitated carrying out a large number of fumigations on various types of plants under a range of varying conditions. Whilst these experiments have shed a great deal of light on the general question of fumigation, it has been found that in order to be successful in controlling red spider without distressing the plants, a certain amount of experimental work must be carried out by the individual applying the treatment, in order to ascertain the best conditions for fumigating under the conditions prevailing in the nursery or garden under consideration. For example, the leakiness of a given range of houses and the natural drift of the vapours during fumigation are factors which have to be worked out by each worker, and the man on the spot is the only one who can possibly possess such knowledge as a result of experience over a fairly lengthy period. Consequently, any information given in this article must only be taken as an indication or general guide upon the lines on which it is necessary to work.

It has been found that some plants are able to withstand the higher dosages and longer periods of fumigation than others. Cucumbers and Vines must be treated more carefully than Carnations, but Tomatos will withstand a higher concentration of naphthalene without detriment. Generally speaking, younger plants are more susceptible than older ones, but in every case a good healthy plant with first-class root action will withstand the treatment far better than a plant of low stamina and vitality. It will be obvious, therefore, that to successfully control red spider it is wrong to allow the infection to become severe before applying the naphthalene treatment and frequent fumigations at low concentrations are to be preferred to periodical heavy dosages.

One of the greatest problems in fumigating a large block of houses, such as exist in the Lea Valley, is to secure an even distribution of the vapours throughout the block. Unfortunately, when the large block system of building was introduced little consideration was given to the practicability of successfully fumigating such large areas.

If red spider is to be properly controlled in such types of houses it will be necessary to give consideration to the possibility of erecting portable screens so as to block off say, five or six large houses at a time. Herein lies the secret of successful pest control under such unfavourable conditions.

Damped Hessian screens hung from the gutters of the houses have been tried, but this system of partitioning is clumsy and costly, and by no means vapour-proof. It is important to carefully calculate the cubical capacity of the house beforehand in order to gauge the amount of naphthalene required; this can be done by multiplying the length by the breadth, and multiplying this result by the average height. The average height is obtained by adding the height from the ground to the ridge to the height from the ground to the gutters, and dividing by two.

TABLE OF CONCENTRATIONS

Type of House.	Length.	No. and Type of Lamps.	Concentration of Naphthalene per 1,000 cubic ft.	Period of fumigation; hours.
Tomatos.				
Low Ridge	200 ft.	Small 8-10	8-10	12-16
Single, high ridge gutters	200 ft.	Large 6-8	8-10	12-16
Single, high ridge open gutters ...	200 ft.	Large 6-8	8-10	12-16
Block, high ridge open gutters ...	200 ft.	Large 6-8	10	12-16
Block of aeroplane ...	200 ft.	Large 6-8	10	12-16
Cucumbers.				
Single, low ridge closed gutters ...	200 ft.	Small 8-10	6½-7	12-16
Block, low ridge open gutters ...	200 ft.	Small 8-10	7	12-16
Vines.				
Ordinary Vinery ...	100 ft.	Small 5-6	7-8	10-12
Carnations.				
Usual type .	100 ft.	Large 3-5	8-10	12-16

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* *The Strawberry. Containing Practical Directions for the Propagation, Culture, Harvesting and Marketing of Strawberries for Profit.* By Samuel Fraser. New York: Orange Judd Publishing Company, Inc. London: Kegan Paul, French, Trubner and Co., Ltd. 1926. Price $1.25.

GENERAL OBSERVATIONS

(1) For high ridge houses the large type of lamp is most suitable, but for Cucumber houses the small lamp only should be used. The lamp wick should be cut level before lighting up, and it has been found advantageous to light the lamps (first time using) about an hour before actual use to secure a flame free from peaks. It is essential to keep the lamps as scrupulously clean as if they were being used in a private dwelling house.

(2) The plants should be well-watered previous to fumigation. Overhead damping may be employed in the case of Tomatos, but any moisture on the leaf surface may act as a protection to the spider and encourage the possibility of mildew and scalding of the small fruit should the house temperature rise too high.

(3) If all ripening fruit is closely picked before fumigating, the risk from tainted flavour becomes negligible. Fruit picked immediately after a fumigation should be aerated for so long as possible prior to packing (Tomatos two to three days, Grapes, ten days).

(4) A house very badly infested with spider must be treated with greater caution than a healthy one, owing to the lowered vitality of the plants in consequence.

(5) Root action should be good, as plants of low vitality are not able to withstand the fumes of naphthalene so well for the period necessary to kill the spider.

(6) The house, after being thoroughly watered should be closed for an hour or so before starting the fumigation so as to obtain a fairly high degree of humidity, 90% to 95% actual moisture.

(7) Warm, windless weather is best suited for purposes of fumigation, and fire heat should be used if necessary in order to keep up a suitable temperature during the night. The house temperature should not be less that 65° to 70°F., and not more than 105°F., and this should be maintained throughout the whole period of fumigation.

(8) The best time to start the fumigation is about 5 p.m. To start earlier, say in June or July, might have the effect of raising the temperature too high, necessitating the opening of ventilators with consequent loss of vapour.

This is the chief objection to day-time fumigations, particularly on Tomatos, which require more air than Cucumbers. Day fumigations, however, may be carried out early in the season when the sun's warmth is not likely to raise the temperature of the house when closed to above 105°F.

Such fumigations have been carried out with success in the late spring and early summer.

(9) The length of the period of fumigation should not be less than twelve hours. It is important that the houses should be as air-tight as possible, as any leaks serve to lower the concentration of fumes.

(10) When using the lamps for the first time, it is advisable to fumigate one house instead of treating the whole block with insufficient knowledge of the procedure. When single houses with open gutters are fumigated, it is necessary to increase the quantity of naphthalene to allow for the escape of the vapours into adjoining houses. It is important that the ventilators be also closed in adjoining houses, or there will be a still greater loss of naphthalene fumes.

(11) Since the eggs are more difficult to kill than the adult, the effect on the plants is less likely to be detrimental if three fumigators are given with an interval of one week between each fumigation (depending on the degree of the infestation) than if the houses are fumigated only once, using a very high concentration of naphthalene.

Probably the greatest advantage accruing from the use of lamps is that a much more definite control over the conditions under which the fumigation takes place is acquired, although the use of the lamps as in all scientific methods of control. is by no means fool-proof.

(12) It has been found that leaf-scorch is more likely to occur in low-type houses, especially if the plants are in actual contact with or very near to the glass. It is, therefore, necessary to keep a reasonably close watch on the conditions of plants in this new method of fumigating. In the event of the plants becoming distressed, air can at once be admitted and the lamps containing the naphthalene residue removed from the house. With "broadcasting" no such action is possible.

(13) Low night temperatures are unfavourable for fumigations; they cause a stratification of the vapours with formation of pockets of concentrated vapour which are likely to induce scorching, with ultimate condensation of the vapours.

(14) Although the fumes of naphthalene are not of a highly dangerous nature, it is imprudent to enter the house more often than is absolutely necessary during the fumigation. After the fumigation, it is desirable for the healthy growth of the plants that the fumes shall be quickly expelled from the house.

(15) A fairly high humidity should be maintained during the fumigation; this can be secured by hosing down the paths and borders about an hour before fumigating.

(16) Houses which have been treated for spider invariably show the first beneficial effects of treatment by the condition of the new growth, which is clean and healthy, in marked contrast to the old spider-ravaged leaves.

(17) The following plants have been successfully fumigated against red spider without producing any deleterious effects upon them: Tomatos, Cucumbers, Carnations, Smilax, Asparagus Sprengeri and A. plumosus nanus, Arums and Vines (Cannon Hall, Muscat of Alexandria, Black Hamburgh, Gros Colmar, Alicante, Lady Downes, Lady Hutt and Appley Towers).

SPECIAL NOTE.

Each house has its own peculiarities, leakage, drift, etc., factors which cannot be controlled.

The foregoing directions are applicable to all houses, but it is essential that the special conditions peculiar to house, or houses to be fumigated be observed, and the directions modified to meet these altered conditions.

It is a wise plan to start with a low dose, and if a good kill of spider does not result, and no harm is done to the plants, *then* raise the dose gradually.

A complete kill is usually obtained but a wiser plan in the control of all pests is to keep them within limits where their activities are not harmful to the plants.

The grower should be prepared to discover the best conditions for fumigating under his own particular method of growing; it is better to fumigate with low concentrations at frequent intervals rather than give one heavy fumigation.

It is necessary to use a large proportion of common sense along with the naphthalene. *Theodore Parker.*

NOTE FROM NEW ZEALAND.

NEW ZEALAND (NELSON) ALPINE AND ROCK GARDEN SOCIETY.

I was pleased to read the article by Mr. Cuthbertson on our Society in your issue of June 5, 1926, and write to say we are still flourishing and enclose a report which will give you more information. Our membership is now over 260, and I have distributed to members during the past three months over three thousand plants free. Besides sending about five thousand native and other plants to nurseries, up-to-date our Society has established on the native rockery ninety-six different dwarf Veronicas. It is not an easy matter to send native plants to England, but I would like to correspond with British growers in regard to making an exchange for Veronicas. We could send many native plants, but while doubtful if many would survive the long journey, I am fairly confident Veronicas will. The foliage and blossom of a number of those are very beautiful. *A. Wilkinson, Hon. Secretary and Treasurer, Examiner Street, Nelson.*

PUBLIC PARKS AND GARDENS.

The Castle and Pleasure Gardens,

Guildford.

"On the other side of the hill is the town of Guildford, which, (taken with its environs) I, who have seen so many, many towns, think the prettiest, and, taken altogether, the most agreeable and most happy-looking that I ever saw in my life." So wrote William Cobbett, one Sunday evening, just a hundred-and-one years ago, and now a well-known Guildfordian, Dr. G. C. Williamson, has written a history of the ancient castle which stands just off the quaint and picturesque High Street that William Cobbett loved so well.

The castle was purchased by the Corporation in 1885 and the grounds laid out as pleasure gardens. These constitute one of the most charming resorts of this fine old town set right in the heart of the Surrey hills. The grounds are extremely well-kept, under the able supervision of Mr. Charles Saunders, who has been superintendent over the long period of thirty-eight years. At all seasons of the year the grounds are a credit to Mr. Saunders and his staff, to whom the Mayor paid a high compliment in the Guildford Council Chamber a few days ago. From early spring right on through the summer until the winter draws near the many beds are bright with flowers; and in sunny places and shady nooks seats are provided for those who love such scenes of quietness and beauty.

The Superintendent's cottage used to be "The Bowling Green Inn," near to which is the main entrance. Beneath the shade of the tall Apple and Pear trees (relics of an old garden) is a grass plot with two flower beds. and on the day of my visit, October 5, one bed was gay with Begonias, and in the other Chrysanthemum Cranford Yellow was just coming into flower. Facing this plot is the town war memorial, its supporting pillars decorated with flowers, chiefly Lilium speciosum rubrum. Beyond the memorial is the old bowling green, and at one end of the green is a long border devoted to carpet bedding and in it golden Pyrethrums arranged in the form of letters proclaim the Mayor's name year after year. Other spaces in the border are filled by Echeveria and blue Lobelia, the whole being set off by a background of clipped Yew.

To the left of this border, and on a raised bank, is the vivid splash of scarlet that drew forth the Mayor's eulogy. It is a bed of Salvia splendens with an edging of dwarf, white Alyssum, that challenges attention. It cannot be passed unseen. Further along on this bank is the bandstand and jubilee memorial Oaks, and at the far end more flower borders gay with Dahlias, Michaelmas Daisies, Antirrhinums and Roses.

This upper section of the ground is divided from the lower by a deep depression that at one time formed the castle moat. The lower grounds are reached by a sunken and winding path having high walls on each side, the Bargate stone being covered with trailing creepers, now flaming into crimson and gold. From this spot the most impressive view can be obtained of the castle keep, which, standing on its high mound, towers above a fine, old, Ivy-crowned mass of dull grey stone that has weathered the storms of centuries and now affords friendly shelter for innumerable pigeons and jack-daws.

The bed of the moat has been formed into a path, and on either side of it, on the green sward, are ornamental trees and more beds of flowers. Verbena venosa, Pelargonium Flower of Spring and P. Madame Crousse, making a very creditable display here. Close by is a raised crescent of Hypericum, a little fish-pool, fountains, and a rockery. Still following the path, past beds of Heliotrope and Coltness Gem Dahlias, dotted with good specimens of Canna, the tour comes to an end. A few steps along Chapel Street, and the busy High Street is reached once more, where in the modern rush of life one feels thankful that close at hand is a pleasant resting place dedicated to the use of the public for ever. *W. S.*

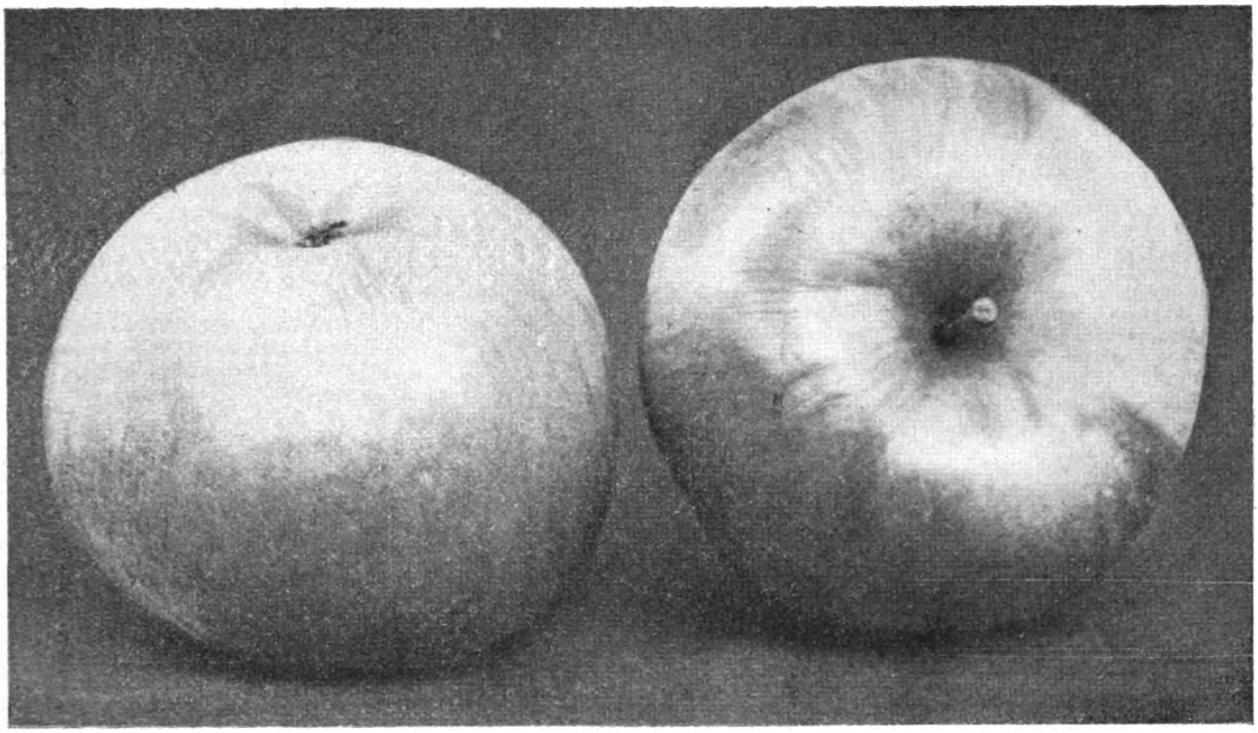

FIG. 153.—APPLE BELLE DE PONTOISE.

FRUIT REGISTER.

APPLE BELLE DE PONTOISE.

Apple Belle de Pontoise (Fig. 153), a seedling from Emperor Alexander, is a very useful late culinary variety. The tree is a vigorous grower and very fertile. The fruits are of large size, flattish on the top and with an open eye set in a wide basin. The flesh is white, sweet and juicy, and excellent when cooked. The fruits keep well and for general garden purposes the variety is to be strongly recommended. Belle de Pontoise is not one of the oldest Apples, for it was only introduced to commerce in 1879. It was shown by Messrs. James Veitch and Sons at the R.H.S. meeting on January 12, 1879, when it received an Award of Merit.

SELECT VARIETIES OF FIGS.

As a utilitarian variety, the ubiquitous Brown Turkey assuredly stands first in a list of select Figs It is mainly a mid-season variety; the fruits are of medium size, long, brownish-purple in colour, and with a scarcely perceptible bloom; the flesh is red and of exceedingly good flavour.

Brown Turkey is probably the best main-crop sort for growing both under glass and out-of-doors; it has many synonyms, such as Lee's Perpetual, Brown Naples and Italian.

White Marseilles is an early variety of the first quality and one that is excellent in every respect for indoor culture; it forces well, produces fruits of medium size, coloured pale green, and the flesh is almost transparent, sweet and very rich. This variety is sometimes known as White Genoa and White Naples.

Negro Largo, a second-early variety of the largest size, has one fault, inasmuch as it rarely ripens more than one crop in the season, but otherwise it is a most excellent Fig for indoor culture. The fruits are pear-shaped, and almost black in colour; the flesh is red, tender and exquisitely flavoured. It is one of the best varieties for pot culture.

White Ischia is, perhaps, the smallest of all Figs, but it is most deliciously flavoured and the tree is very productive; the fruit has a pale green skin; the flesh is white, remarkably sweet and tender. This variety will always produce two and sometimes three crops a year in a warm house, and it is very suited to pot culture.

Bourjassote Grise is a fine variety for growing in pots. The fruits ripen late in the season; they are of medium size, round, with a brown skin; the flesh is very deep red and of fine flavour. The tree is very productive. Brunswick is a very hardy Fig and with Brown Turkey may be grown on a wall in the open; it is a mid-season variety. The fruits are large, pear-shaped, coloured pale green with a bluish flush; the flesh is white, reddening towards the centre, and of very fine flavour. This sort is not suitable for forcing.

Violette Sepor is a useful late variety for indoor culture, either in pots or borders. The fruit has a rather thick skin, but the bright red flesh is exquisitely flavoured. The fruits travel well. Other excellent varieties are Castle Kennedy, a good wall Fig in warm localities; Osborn's Prolific, a very fine sort for pot culture and sent out by Messrs. Osborn, of Fulham, in 1879; St. John's and Pingo De Mel. *Ralph E. Arnold.*

REMARKS ON THE CONDITION OF THE FRUIT CROPS.

(See Tables and Summaries, Ante, pp. 111-117.)

(*Continued from p.* 315.)

ENGLAND, S.W.

Shropshire.—All fruit trees blossomed with extraordinary profusion, in common with all other flowering trees and shrubs, after last year's wonderful summer and autumn, but owing to continued night frosts in spring our crops are very light. Apples Lane's Prince Albert, Rival and King of the Pippins set very well. Pears Pitmaston Duchess, Marie Louise and Louise Bonne of Jersey cropped satisfactorily. Early Plums were also a good crop. Cherries set well but dropped at the stoning stage. Raspberries were well above the average in quantity but Strawberries were very disappointing; frost nipped them while they were in flower. The soil is somewhat heavy in texture. *Roger F. Jones, Oteley Hall Gardens, Ellesmere.*

——Continual cold winds and frosts prevailed during the flowering period, followed by attacks of aphis in virulent form, and in some cases the trees were entirely defoliated, especially Black Currants. These gardens are situated on high ground, hence, in the latter case, we were more fortunate than many, and Black Currants were an average crop. Pears and Apple trees are bearing very clean fruits. The soil is a sandy loam on clay. *George Robinson, Gannow Hill Gardens, Welsh Frankton, near Oswestry.*

——The fruit crops are woefully disappointing this year. The season began very hopefully for the trees were laden with bloom and Plums and Pears appeared to set well, bush fruits also. Then late and severe frosts ensued, killing the Apple bloom and causing the fruits that were already set to drop off. Pears at first seemed to survive but have since fallen off. Our soil is a heavy, very deep, tenacious, boulder clay. *E. F. Hazelton, Yeaton Penerey Gardens, Bomere Heath, Shrewsbury.*

Worcestershire.—The Apple crop is extremely disappointing, despite the prolific bloom on the trees. The failure is due apparently, to bad climatic conditions in spring. the weather continuing wet and cold all through the fertilisation period. At an earlier stage in May we had a long spell of fine, sunny weather whilst Apricots, Peaches, Nectarines, Pears, Plums and Cherries were in blossom, all of which set fine crops, Early Prolific Plums excepted. Black Currants were a very unsatisfactory crop owing to aphis. Loganberries were a heavy crop, as usual. *W. Crump, V.M.H., Oakridge, Malvern Link.*

——Fruit trees generally flowered profusely and stone fruits set well, but the frost on May 5 quite spoilt the crop and severely crippled the blossom of Apples and Pears. The new growth is clean and healthy and promises well for future crops. Our fruit trees are planted on ground sloping to the south-west. The soil is heavy, overlying clay in some parts. *J. F. Simpson, Lapal House Gardens Quinton, Birmingham.*

——The fruit crops were much under the average although there was an abundance of blossom on Apple, Pear and Plum trees, but owing to dull, sunless weather, the fruits failed to set. Gooseberries, Black Currants and Raspberries were plentiful. Plums were about half an average crop, whilst of Apples, trees of Bramley's Seedling have about an average crop. *Ernest Avery, Finstall Park Gardens, Bromsgrove.*

——The Apple crop is the worst for over twenty years. There was plenty of blossom but all the time the trees were in flower the weather was wet and cold with slight frosts at night. The trees were never dry and it was too wet and cold for bees to work. Pears that flowered early set a good crop, but late-flowering sorts were affected similarly to Apples. Plums were a fair crop, except Early Rivers. Small fruits were good. All fruit trees are very blighted. Strawberries were a good crop, The Duke being the best-cropped variety. There are good crops of Filberts and hedge Nuts, but not many Walnuts. Our soil is a heavy loam. *C. A. Bayford, Davenham Gardens, Malvern.*

WALES.

Cardiganshire.—All fruit trees developed plenty of blossom, but cold, wet weather and sharp frosts partly destroyed what otherwise would have been abundant crops. Trees that flowered early or late escaped the bad weather. The following varieties are fruiting here.—Pears: Williams's Bon Chrétien, Conference, Souvenir du Congrés, Pitmaston Duchess, Beurré Hardy, Autumn Nelis, Beurré de Arenberg and Doyenné du Comice. Apples, cooking: Lord Grosvenor, Annie Elizabeth, King Edward VII, Bramley's Seedling, Warner's King, Sandringham, Gascoyne's Scarlet Seedling, and Newton Wonder. Dessert: King of the Pippins, Mr. Gladstone, Worcester Pearmain, Christmas Pearmain and Charles Ross. Plums: Monarch, Czar, Victoria, Pond's Seedling, Old Gage and Transparent Gage. The soil in these gardens is heavy and wet, overlying slaty rock. *W. Phillips, Derry Ormond, Llangybi.*

——Apple trees flowered well, but late frosts on six consecutive nights spoilt the crop. Pears are an average yield, the weather at the time the trees were in flower just suited them. Plum trees flowered well but did not set a good crop. The flowering period was about three weeks earlier than usual and we had cold east and north-east winds at the time. Cherries were a complete failure, likewise Apricots, Gooseberries were an under crop; the bushes flowered before many bumble bees were about. Black Currants dropped a lot of their fruits but Red Currants were about an average yield. Strawberries were an average crop with Fillbasket the best variety. Nuts are almost a failure. The soil is a medium loam but cold and sour owing to its position. *D. H. Dunn, Hafod, Pontshydygroes, Ystrad, Meurig, near Aberystwyth.*

(*To be continued.*)

HOME CORRESPONDENCE.

Pentstemon gentianoides.—A bed near the Succulent House at Kew, planted with Pentstemon gentianoides, has presented a magnificent display for several weeks past and has been the source of much comment and admiration from visitors. The species is of Mexican origin and was first introduced to this country between eighty and ninety years ago. It has also been known as P. Hartwegii, and together with P. Cobaea has been largely used by hybridists in producing the present race of garden Pentstemons. The plant grows about four feet high; the panicles of delicate mauve flowers are produced with great freedom, while the sturdy habit of the plant renders support unnecessary. The individual flowers are rather loosely arranged on the flower stem and are slightly pendulous, a feature which enhances the graceful appearance of this desirable species. *T. H. Everett.*

Papaver pilosum hybridum.—Mr. Macself, (p. 286) has not written a word too much in favour of Papaver pilosum, which is a most useful plant in many ways and a very free seeder. I was much interested in his remarks about P. pilosum hybridum, raised by the late Rev. C. Wolley-Dod. I had the pleasure of being presented with a small plant of this Poppy by that excellent gardener, and had it for many years, but, like Mr. Macself, I had lost sight of this hybrid plant until I saw it offered in a catalogue recently. This hybrid Poppy never seeded with me, or, at any rate, never produced any fertile seeds. On opening the capsules the incipient seeds appeared to have dried up. It is a very good plant indeed, and should be more sought after than it has been. *S. Arnott.*

Potato Haulms.—I was somewhat surprised when a west Sussex farmer, speaking to me recently as a professional gardener, suddenly asked me which part of the Potato plant was the most useful. With little hesitation, and rather expecting a catch, I solemnly replied: "The haulm, of course." "Quite right, Sir!" was the farmer's reply. "We reckon to make more money out of our haulms than we do out of the Potatos themselves. Distilleries purchase the haulms in tons for use in connection with the manufacture of spirits. We even grow a giant Potato (Elephant) on purpose for this crop. The haulms sometimes attain a height of four feet or so, and the tubers are rough-cooked and mashed for pigs and cattle food." This was all news to me, and may be news also to many readers of *The Gardeners' Chronicle. Captain E. A. Saunders.*

Flavour in Potatos.—Mr. Crowe's remarks on p. 297 throw a lurid light on the producer's methods. I had often wondered why the produce of the best quality Potatos consisted so often of tasteless rubbish; now I know. Anything is good enough for the market so long as it is produced in sufficient quantity to pay; quality is apparently of no importance, so long as the people are content to buy what is supplied, and this applies to many other things besides Potatos. Some day, I hope, we shall be able to grow food in this country sufficient for our own needs, and strict inspection will keep up its quality. That will be when people realise what is good food and what is not. At present the vast majority are totally ignorant in this matter. *C. Nicholson, 35, The Avenue, Hale End, E.4.*

Slugs and King Edward Potatos.—In "Answers to Correspondents," on page 299 of your issue for October 9, the following appears: "Nor do we think that King Edward Potato is more liable to injury by slugs than other varieties." I should like to ask if this is correct. I have noticed on one or two occasions that King Edward Potato has been badly attacked by slugs; other varieties growing quite near have been uninjured. Perhaps other readers of *Gard. Chron.* would be able to state if slugs have any preference for any particular variety of Potato. My experience seems to show that they have. *G. C. Johnson.*

SOCIETIES.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

Friday, October 1.—*Committee Present:* J. B. Adamson, Esq. (in the chair), Messrs. R. Ashworth, C. Branch, A. Burns, A. Coningsby, J. Evans, A. Keeling, D. McLeod and H. Arthur (Secretary).

First Class Certificates.

Cattleya Lady Veitch, Rosslyn variety.—A handsome flower with pure white sepals and petals; the broad lip has a pale lemon-coloured throat. *C. Queen Mary, Rosslyn variety.*—A large flower of even colour with a deep velvety-crimson lip. From H. T. Pitt, Esq.

Odontoglossum crispum var. Caro.—A white flower of good texture with light brown spots on the sepals and petals; the lip has a large blotch. From Mrs. Gratrix.

Brasso-Cattleya Monarch.—A large, well-formed flower, with a broad, fringed lip. From J. B. Adamson, Esq.

Awards of Merit.

Cattleya Lorna var. Exquisita; C. Eleanora Rex; C. Hardyana Flammea; C. Aeneas var. Rosita; Brasso-Cattleya J. B. Adamson; B.-C. Jazz; Cypripedium Enchantress, Adamson's variety. From J. B. Adamson, Esq.

Odontoglossum St. George var. Momus; Odontioda Pamela, Rosslyn variety; Cattleya Illustre Cloth of Gold; Miltonioda Harwoodii Excelsior; Coelogyne speciosa albens. From H. T. Pitt, Esq.

Sophro-Laelio-Cattleya Anzac var. Suela. From Mrs. Bruce and Miss Wrigley.

Cattleya Fabia atrorubra. From Messrs. Sanders.

Groups.

Gold Medals were awarded to the following exhibitors who staged fine displays of Orchids: J. B. Adamson, Esq., Blackpool (gr. Mr. J. Howes); S. Gratrix, Esq., West Point (gr. Mr. C. Branch); and H. T. Pitt, Esq., Stamford Hill (gr. Mr. W. Thurgood).

Mrs. Bruce and Miss Wrigley, Bury (gr. Mr. A. Burns) were awarded a large Silver Medal for a group.

BIRMINGHAM AND MIDLAND GARDENERS'.

Of the several societies renowned for their usefulness, none can excel this old society, which was founded in the year 1875. Season after season it has continued to arrange lectures and these are followed in spring and summer by visits to neighbouring estates and nurseries, by the courtesy of those who appreciate the good work such societies are doing. The Birmingham and Midland Counties Gardeners' Mutual Improvement Society holds meetings fortnightly during the autumn and spring session, and offers exceptional educational facilities to the professional and amateur alike.

Although its doings are seldom reported, this is not the fault of the Editors concerned, but due to modesty on the part of the committee or secretary, as the case may be. The Birmingham society has maintained a membership of several hundreds during its many years of service and the members are drawn from the neighbouring towns, cities and suburbs. The library is one of the largest of its kind outside of London, and members appreciate this probably as much as anything else the Society can offer. Several volumes are added to the collection every year, purchased by the Society, which produces a credit balance annually. The headquarters are at the Chamber of Commerce in the heart of the city.

The winter session for 1926 was opened on Monday evening, October 11, with a lecture by the president (who by custom opens the session), Dr. Jessie B. Elliott, of the Birmingham University. This lady takes a very keen interest in the Society, and the lecture, illustrated by coloured slides, given by her on this occasion, dealt with a recent visit to the bulb fields of Holland. Such a lecture rendered by so qualified an individual from information obtained at first hand was greatly enjoyed and appreciated.

Other lectures are arranged as follow:—October 25: Review of Birmingham Horticultural Show, Mr. J. Smith, Superintendent of the Birmingham Parks; November 8: Alpine Plants (Switzerland), by Dr. Ethel Poulton, Birmingham University; November 22: Review of Birmingham Chrysanthemum Show, by Mr. J. Smith; December 6: Aims and Objects of the Gardeners' Guild Movement, by Mr. W. H. Jenkins, of the Board of Agriculture, and December 20: Violas, by Mr. H. Milner, Handsworth.

ROYAL HORTICULTURAL.

October 19 and 20.—The Hall at Vincent Square was well filled with attractive exhibits on this occasion, and Orchids were unusually well shown, both by traders and amateurs. Novelties were fairly numerous and interesting.

Orchid Committee.

Present: Sir Jeremiah Colman, Bt. (in the chair), Mr. Gurney Wilson (Hon. Sec.), Mr. Stuart Low, Mr. R. Thwaites, Mr. T. Armstrong, Mr. E. R. Ashton, Mr. Robert Patterson, Mr. H. H. Smith, Mr. A. McBean, Mr. W. H. Hatcher, Mr. J. Cypher, Mr. Fred. K. Sander, Mr. Charles H. Curtis, Mr. Arthur Dye, Mr. S. W. Flory, Mr. H. T. Pitt, Mr. Fred J. Hanbury, Mr. J. Wilson Potter and Mr. J. E. Shill.

First-Class Certificate.

Brasso-Laelio-Cattleya Ambersolis (B.-L.-C. Amber × C. Sunbeam).—Another brilliant and beautiful hybrid from The Dell collection. The flower is admirably proportioned, the petals being lightly waved at the margin and, like the sepals, of a lovely shade of soft orange-yellow; the frilled lip is deep golden yellow with soft cerise margin and apex. Shown by Baron Bruno Schröder (gr. Mr. J. E. Shill), Dell Park, Egham.

Awards of Merit.

Brasso-Laelio-Catleya Salta (Cattleya Suzanne Hye de Crom × B.-L.-C. The Baroness).—This handsome, strong-growing hybrid is delightfully proportioned and has light lemon-yellow sepals and petals. The wide lip has an old-gold central area with deeper veins and a wide, frilled, cerise-pink margin and apex. Shown by Baron Bruno Schröder.

Laelio-Cattleya Minos var. rubra (L.-C. Rubens × C. Tityus).—In this hybrid the flowers are of medium size with rich purple sepals and petals and very deep crimson-purple lip with dull old-gold veins in the throat. Shown by R. Gerrish, Esq. (gr. Mr. Sorrell), The Manor, Milford, Salisbury.

Laelio-Cattleya Zeno (C. Luegeae × L.-C. St. Gothard).—A large and bold-flowered hybrid with blooms about seven inches wide. The broad sepals and petals are clear rosy mauve, while the large lip has a veined, old-gold throat and a ruby-purple apex. Shown by H. T. Pitt, Esq. (gr. Mr. Thurgood), Rosslyn, Stamford Hill.

Cypripedium Lord Wolmer var. Ortis.—A handsome variety of a well-known hybrid; it has heavy, reddish-purple spots on the green and white dorsal and ventral sepals, and the petals are green and greenish brown. A very shapely flower. Shown by Messrs. Sanders, St. Albans.

Odontoglossum Dusky Prince (parentage not recorded).—The shapely flower is of rose shaded mauve, with white margins; the lip has a deeper-hued central area and a cream-coloured apex and margin. Shown by Messrs. Stuart Low and Co.

Groups.

Messrs. Sanders were large exhibitors on this occasion, occupying the whole of the space between the entrance doors and the Orchid Annexe. Their group was conspicuous by reason of the many specimens of Odontoglossum grande it contained. Dendrobium Phalaenopsis was largely and well shown and added grace and colour to the display. Vanda Sanderiana, with a spike of eight handsome flowers was greatly admired as were the pans of Cypripedium The Queen—yellow and white, Cattleya Fabia atropurpurea, C. F. brugensis, C. F. Queen Elizabeth, C. F. alba, the brilliant Laelio-Cattleya Walter Gott and the not less attractive L.-C. Mrs. Medo. Interesting, if less showy subjects, were Stenoglottis fimbriata in fine condition, Cymbidium Dayanum, Cirrhopetalum refractum, C. gracillimum, C. Rothschildianum, Epidendrum inversum album, Phalaenopsis violacea and Paphinia cristata—a very interesting contribution.

Messrs. Stuart Low and Co showed five examples of Cattleya Golden Wren, Laelio-Cattleya Mrs. Medo, Brasso-Laelio-Cattleya Lilian, L.-C. Mrs. Llewelyn and B.-L.-C. G. V. Llewelyn (B.-L. Mrs. Gratrix × L.-C. Dominiana), the last having flowers of a lovely salmon-orange shade; with these were associated Vanda coerulea, the white form of Dendrobium Phalaenopsis, Cymbidium Traceyanum, the old Laelia crispa, L. Perrinii alba, Oncidium Papilio and the lovely old Sophronites grandiflora.

Cypripediums made up the bulk of the subjects grouped by Messrs. J. Cypher and Sons, and among these we noted capital examples of C. Elatior, Shrubbery var., C. Hannibal, C. Queen of the Belgians, C. Royal George, C. Ballet Girl, C. Wm. Lloyd, C. Mary Beatrice, C. Madame Jules Hye, C. Dreadnought and C. Maudiae Brasso-Cattleya Ilene and Laelio-Cattleya bletchleyensis × aurea were also conspicuous in this display.

Mr. H. Dixon, Putney, had a bright exhibit enlivened by Odontiodas and Sophronitis. We also noted Masdevallia tovarensis, Laelio-Cattleya Carmencita aurea, Cypripedium insigne Sanderae, Oncidium pulvinatum and several hybrid Odontoglossums.

Many well-grown Orchids were pleasingly arranged by Messrs. Cowan and Co., Cattleya Peetersii alba, with five splendid flowers, was the central feature of this firm's group, but there were many other fine things, notably Laelio-Cattleya St. George (L.-C. St. Gothard × C. Fabia), Cattleya Daedalus, C. iridescens, C. Monica, C. Princess Royal var. Enchantress, Cypripedium Robin Hood, C. Gaston Bultel var. King Edward VII, and the bold, rounded C. Bedfordiae.

Mr. H. T. Pitt's exhibit was a very fine one and included finely-grown specimens of Cattleya Peetersii, with six big blooms; Brasso-Cattleya Nestor, B.-C. Penelope, Laelio-Cattleya Profusion, L.-C. Warrior, L.-C. Zeno, Cattleya amabilis alba, Odontoglossum Thaisa, with rich brown flowers, Coelogyne speciosa alba, Cypripedium Fairrieanum and Cirrhopetalum Rothschildianum.

Messrs. Charlesworth and Co.'s large exhibit attracted a great deal of attention because of its central massing of beautiful spikes of the golden Oncidium varicosum Rogersii, flanked on either side with Dendrobium Phalaenopsis in great variety. In addition there were examples of Miltonia William Pitt, Brasso-Cattleya British Queen, Cattleya Hardyana alba, Odontonia Duchess of York (M. Bleuana × O. majesticum), and the striking Brasso-Laelio-Cattleya The Empress (B.-C. Mrs. J. Leeman × B.-L.-C. Truffautiana).

Messrs. Sutton Brothers contributed a group wherein we noted Cypripedium St. Albans, C. Maudiae magnificum, Oncidium incurvum, and the bright golden-yellow Laelio-Cattleya Litana.

Sir Jeremiah Colman, Bt. (gr. Mr. J. Collier), Gatton Park, Reigate, exhibited a group in which Cattleya Browniae, Gatton Park var., was grandly represented, one spike carrying twenty-one flowers; Cypripedium Maudiae, Odontoglossum Duvivierianum and Brasso-Laelio-Cattleya Antoinette, Gatton Park var., were other good things.

Competitive Orchids.

The Orchid Trade Cup, offered for a group of Orchids by an amateur was awarded to J. J. Joicey, Esq. (gr. Mr. J. McKay), The Hill, Witley, with a bold exhibit of well-grown plants of Oncidium varicosum Rogersii and Dendrobium Phalaenopsis at the back, and Laelio-Cattleya Thora var. Elegance, L.-C. Linda, L.-C. Linda var. splendens, the golden L.-C. witleyensis and Cattleya Alcemida var. alba in the centre, the front being occupied by Cypripediums, including a little plant of the old C. Schlimii, C. Fairrieanum and C. Maudiae.

The Schröder Cup for a large group of Orchids was won by R. Gerrish, Esq. (gr. Mr. W. Sorrell), The Manor, Milford, Salisbury, with a fine collection of capitally-grown plants all grouped so that every plant was amply displayed. A few of the finer subjects noted were Cattleya Peetersii, with half-a-dozen flowers, Laelio-Cattleya Queen Mary, with nine blooms; L.-C. Gothyus, C. Fabia, C. amabilis superba, Brasso-Cattleya Mirabilis, B.-C. Andromeda, and a fine lot of Odontoglossums and Odontiodas.

E. R. Ashton, Esq. (gr. Mr. C. V. Kent), Broadlands, Camden Park, Tunbridge Wells, was the only exhibitor of six Orchids, but he deserved the first prize awarded him for his specimens of Sophro-Laelio-Cattleya Anzac, Broadlands var., which had six flowers, and also received a Cultural Commendation; S.-L.-C. Camden, Laelio-Cattleya St. Gothard, L.-C. Serbia, Lee's var., Cattleya Armstrongiae, and Brasso-Cattleya Leemaniae × Cattleya Rhoda.

Floral Committee.

Present: Section A.—Mr. Henry B. May (in the chair), Mr. F. J. McLeod, Mr. J. M. Bridgeford, Mr. D. Ingamells, Mr. William Howe, Mr. M. C. Allwood, Mr. Hugh Dickson, Mr. Donald Allan, Mr. F. G. Cousins, Mr. F. Streeter, Mr. W. H. Page, Mr. A. E. Vasey, Mr. James B. Riding, Mr. W. B. Gingell, Mr. D. B. Crane, Mrs. Helen Lindsay Smith, Mr. W. S. Thomson, Mr. Charles E. Pearson and Mr. E. R. Janes.

Section B.—Mr. Gerald W. E. Loder (in the chair), Mr. Charles T. Musgrave, Mr. W. G. Baker, Mr. W. Yeld, Mr. A. Bedford, Mr. F. G. Preston, Mr. Reginald Cory, Mr. Mark Fenwick, Mr. W. B. Cranfield, Mr. E. H. Wilding, Mr. George Harrow, Mr. James Hudson, Mr. W. J. Bean, Mr. E. A. Bowles, Mr. R. D. Trotter, Mr. T. Hay and Sir William Lawrence, Bt.

Awards of Merit.

Carnation Ruby Glow.—This is an especially fragrant perpetual-flowering variety, of sturdy, free-flowering habit. It is a well-formed flower of good size and velvety crimson colour with a darker sheen towards the ends of the petals. Shown by Messrs. Stuart Low and Co.

Chrysanthemum alba.—A large Incurved variety of milky-white colour and considerable decorative value. Shown by Messrs. Keith Luxford and Co.

Chrysanthemum Atalanta.—A valuable Japanese variety of the best market size. It is a very shapely flower of slightly flattish shape and delightful silvery-pink colouring. Shown by Messrs. Cragg, Harrison and Cragg.

Arbutus Menziesii.—A large branch, bearing a considerable number of orange-coloured fruits, unusually large for the species was shown by the Director, Royal Botanic Gardens, Kew. This is one of the most beautiful members of the genus, and when grown in a rich soil becomes quite of tree size. On the light soil of Kew there is a specimen some twenty-five feet in height. It is a native of California.

Kniphofia multiflora.—At a casual glance this species suggests a narrow spike of an Eremurus rather than that of a Kniphofia. The tall, slender spikes are of a dull creamy white colour. Shown by Messrs. M. Prichard and Sons.

Polystichum aculeatum gracillimum, Forms No. 3 and No. 11.—The two varietal forms illustrated vigorous fronds of improved varieties of the Hard Shield Fern and are of considerable interest to lovers of hardy Ferns. Shown by Mr. W. B. Cranfield.

Chirita Marcanii.—A well-grown pot plant of this stove Gesneraceous plant was shown by the Director, Royal Gardens, Kew. The ample leaves are of a bright, light-green colour, and the yellow flowers are semi-pendulous and lie on the foliage.

Groups.

Chrysanthemums were extensively shown and, with the exception of an occasional large flower, these were of the size most valued for market sale and for home decoration. Considerable taste was shown in the arrangements and the quantities of massed blooms made a very attractive display, Messrs. Puttridge, Ltd., filled a large space with exceedingly well grown flowers of Pink Delight, Mrs. Hutt, of rich crimson colouring, Blanche de Poitou, Almiranto of glowing colour, and the rich crimson Mrs. R. F. Felton as disbudded blooms. Their varieties shown as sprays included Cranford Cream, October Yellow and Mrs. Jack Pearson. All along the front of this attractive exhibit Messrs. Puttridge placed a row of pots of Cyclamen neapolitanum of great excellence.

Near the "New Plant" position Messrs. Keith Luxford and Co. had a large exhibit of Chrysanthemums. Bronze Cranfordia, Primrose Poitou and Golden Cranfordia were the best of the disbudded varieties, while J. Bannister, Bronze Betty Spark, Cranford Cream, Harvester and Provence in sprays were very decorative. Mr. William Yandell had many useful varieties attractively arranged with autumn foliage. The chief Chrysanthemums were Goacher's Crimson, Sanctity, Bronze Profusion, Dragon and Orange Girl.

Chrysanthemums of excellent quality were shown by Messrs. Hewitt, Ltd., who set up admirable stands of disbudded blooms of Pink Profusion, Mrs. G. Monro, Blanche de Poitou, Rayonante with good blooms of single varieties and two vases of late spikes of Delphiniums. Messrs. Barham and Wood also staged good blooms of Red Almirante, Sanctity, Cranford Pink, Blanche de Poitou and September Glory. Mr. A. G. Vinten showed decorative stands of Red Almirante, Mrs. Hutt, Knaresborough Yellow and Silver Queen as disbudded blooms, and Mayford White, Minstrel and other useful varieties in spray form.

Near the Orchid exhibits Messrs. L. R. Russell, Ltd., exhibited a collection of splendid Nepenthes, which, raised above a groundwork of Marantas, Alocacias, Anthuriums and Columneas, made a fascinating display. The many Nepenthes included N. ventricosa which has "pitchers" of true pitcher-shape and are of distinct pea-green colour with a vividly-coloured rim; N. mixta, N. paradisea, N. O'Brieniana, N. Henryana and N. Mastersiana were also represented by exceptionally well-grown plants.

The double-flowered tuberous-rooted Begonias which Messrs. Blackmore and Langdon grow exceedingly well were shown by them as single blooms in separate vases. A great many perfectly formed blooms of delightful colours were set out and behind them were shown charming vases of frilled singles, basket varieties and their vividly coloured crispa varieties.

Carnations were shown exceedingly well by Messrs. Allwood Bros., Messrs. Stuart Low and Co., and by Mr. C. Engelmann. The first-named had delightful vases of Shot Silk, Laddie, Red Laddie, Spectrum and many other good sorts, while at one end a large quantity of Dianthus Allwoodii illustrated the decorative value of their smaller flowers. In Mr. Engelmann's collection vivid colour was provided by large vases of Spectrum, Brenda and Red Laddie, though other shades of colour were equally well represented. Messrs. Stuart Low and Co. had excellent vases of Chintz, Sheila Greer and Duchess of York Fancy Carnations, with many other standard varieties.

The Duchess of Wellington (gr. Mr. H. Bakingham), Ewhurst Park, Basingstoke, exhibited many splendid spikes of Nerine Bowdenii and vividly coloured N. Fothergillii, all cut from out-of-doors. There were also vases of Belladonna Lilies, and Sternbergia lutea. Although introduced from the Azores over 200 years ago Jasminum azoricum is a rare plant in gardens and several vases of this evergreen greenhouse twiner bearing white, fragrant flowers were included. Messrs. Shearns, Ltd., showed a collection of dwarfed Japanese trees, and Mr. J. Klinkert brought a collection of Topiary specimens.

Dahlias were shewn, almost certainly for the last time this year. Mr. Jas. B. Riding had an admirable collection of various types, amongst which Dazzle, Glamour, Cato, Betty and Helen of the useful, small, Paeony-flowered type were especially attractive. Messrs. J. Cheal and Sons had an extensive collection of Dahlias arranged with Aster ericoides and other Michaelmas Daisies. The Dahlias included good varieties of the useful Star, Collerette, Cactus and Mignon types. Messrs. Rich and Co. also staged Dahlias

Roses of considerable excellence were staged by Mr. J. H. Pemberton, whose collection included Pax, Vanity, Penelope and Cornelia of the free-flowering varieties, and he also showed various H.T. sorts.

Mr. Amos Perry again exhibited admirable spikes of Lilium nepalense with L. sulphureum plants of Cimicifuga simplex and hardy ferns. Mr. W. Wells, Jun., had a large quantity of the excellent Gypsophila Bristol Fairy with Kniphofia Uvaria grandiflora and several especially good Michaelmas Daisies, including Ultramarine, Barr's Pink and Queen Mary. The Misses Hopkins had an attractive miniature rock garden. Messrs. Isaac House and Sons continue to exhibit their free-flowering varieties of Scabiosa caucasica and on the present occasion the vases of Clive Greaves of beautiful blue colour and the darker Isaac House were especially attractive.

In a well designed rock garden Mr. F. G. Wood planted Gentiana sino-ornatus, Fuchsia pumila, Salvia Gregii, and some shapely little Conifers. Messrs. Bakers Ltd. associated Eryngium Olivierianum and O. Violetta with Kniphotias, Berberises and other shrubs. Many varieties of Lobelia fulgens and L. syphilitica, Polygonum atrosanguineum and Coreopsis auriculata were shown by Messrs. Ladhams, Ltd.

In the Orchid annexe Messrs. Reamsbottom and Co. had a bright collection of blooms of their admirable strain of St. Brigid Anemones. Messrs. M. Prichard and Sons staged spikes of the tall, cream-coloured Kniphofia multiflora with K. Uvaria, Erigerons, and other border flowers. Sweet Violets were again shown by Mr. J. J. Kettle and Mr. B. Pinney.

Fruit and Vegetable Committee.

Present: Mr. J. Cheal (in the chair), Mr. W. Poupart, Mr. George F. Tinley, Mr. P. D. Tuckett, Mr. J. Wilson, Mr. A. Bullock, Mr. J. C. Allgrove, Mr. E. Beckett, Mr. E. Neal, Mr. J. Harrison, Mr. J. Basham, Mr. E. A. Bunyard, Mr. H. Markham, Mr. A. N. Rawes and Mr. T. Pateman.

Award of Merit.

Pear Sir Harry Veitch.—A provisional Award of Merit was granted to this variety and will be confirmed next season, subject to the tree proving of good habit and free-fruiting after inspection by a deputation of the Committee. The flavour is excellent, and although the fruit cannot be described as one of the most attractive in appearance, it is a welcome addition to dessert varieties now in season. The fruits are of medium size, somewhat irregular in shape and of a russety-brown colour. One of the parents was that excellent variety, Thompson's. Shown by Mr. J. C. Allgrove.

Groups.

An exhibit of vegetables staged by Mr. E. Beckett (gardener to the Hon. Vicary Gibbs), Aldenham House, Elstree, was the most outstanding exhibit in the show: indeed, of the many fine collections of vegetables shown by Mr. Beckett, this was, in the opinion of many, the most noteworthy. It is not an exaggeration to state that any single dish selected at random would have won the first prize in its particular class at a show. Apart from the fine quality, the wonderful colour arrangement and general effect as a whole stamped this superb exhibit as probably the finest display of vegetables ever seen. Mr. Beckett employed a special stand of green trellis work backed by a dark fabric and on the back of the trellis were arranged brackets for displaying some of the exhibits. There were over two hundred varieties of vegetables, comprising not only those in season, but many, such as Peas, which are already over in most gardens. It was a revelation to many of the visitors that vegetables could be arranged so skilfully as to produce a colour scheme equal to one of flowers, yet Mr. Beckett not only attempted, but was successful in this. To take an example: a cone of Radishes giving a patch of bright red was next to the dark green of Runner Bean Best of All, and this in turn next to the dark purple, almost black tubers of Fir Tree Apple Potatos. Behind these were the dark-skinned Potato Lord Tennyson with purple eyes and next scarlet Carrots of the New Red Intermediate type, and on the other side Golden Capsicums on a tall stand, whilst behind these were grey-skinned Onions, red Tomatos and Edgecote Purple Potatos, set off by the background of the trellis whereon were disposed cones of golden-coloured Beans, with a base of red Radishes, magnificent Cauliflowers, Leeks of gargantuan proportions, dainty plants of Capsicums with small red fruits, and the deep green of large Cabbages. Outstanding dishes in the general collection were Late Duke and Autocrat Peas, Golden Capsicums, Early Elstree Turnips, exceptionally large Cardoons, fine Celeriac, Marrows, Cucumbers, new Red Intermediate Carrots and Aubergines.

Mr. J. C. Allgrove showed 115 dishes of hardy fruits, principally Apples. He had a splendid dish of his new Scarlet Newton Wonder variety, and others of S. T. Wright, Cox's Orange Pippin, Chelmsford Wonder, Lane's Prince Albert, Newton Wonder, Wealthy, Baxter's Pearmain and Cox's Pomona. Several choice Pears were displayed, the more notable being Seckle, Mrs. Seden, Beurré Hardy, Beurré Superfin, Doyenné du Comice, Olivier de Serres and Conference. The exhibit also contained a few late Plums.

Sir Charles Nall-Cain (gr. Mr. T. Pateman), Brocket Hall, Hatfield, exhibited eighty-four varieties of fruits in fourteen kinds, including Apples, Pears, Plums, Bullaces, Figs, Quinces, Melons, Grapes, Raspberries and Peaches. The exhibit was very daintily staged, with sprays of autumn-tinted foliage on the tabling and a few Crotons as foils along the centre. All the fruits were of excellent quality. The more notable Apples were Beauty of Kent, Allington Pippin, Alfriston, Cox's Orange Pippin, Ellison's Orange, St. Edmund's Pippin, Lord Lambourne, and Gascoyne's Scarlet. The Pears included Gansell's Bergamot, Pitmaston Duchess, Marie Louise d'Uccle, Santa Claus and Beurré Superfin. Some choice fruits of Late Transparent, President and Coe's Golden Drop Plums were also shown.

Messrs. Dobbie and Co. exhibited a selection of vegetables to demonstrate the nurseryman's method of selecting high-class strains. They were sown in summer, lifted, selected and transplanted this autumn, and will be planted for harvesting the seed in the following summer and autumn, beginning with Turnip seed, which is ripe in June, and finishing with Leek seed, which is harvested in October.

NATIONAL SWEET PEA.

Nearly fifty members of the National Sweet Pea Society met at Essex Hall on the occasion of the Annual General Meeting, on Tuesday afternoon, October 19. Mr. Leonard Collingridge, the President, occupied the chair, and referred feelingly to the death of Mr. T. W. Sanders, a former useful member.

After the usual formalities had been disposed of, the Annual Report for the year, which had been circulated, was taken as read and its adoption moved by the President. The Report makes reference to the Society's exhibition at Cheltenham, and to the winners of the various Challenge Cups and other important prizes; to the Society's Trials of Novelties held at Messrs. Watkins and Simpson's Trial Grounds at Twickenham, and also to the fact that during the coming year the Trials will be conducted by Messrs. Sutton and Sons at their Reading nursery. Reference is also made to the kindly generosity of Messrs. Watkins and Simpson on the occasion of the Society's outing,and to the great interest taken in all the Society's activities throughout the year by Mr. and Mrs. L. Collingridge. The adoption of the Report and Accounts was seconded by Mr. J. M. Bridgeford, the Treasurer, who pointed out that the year now ended commenced with an overdraft at the bank of £32 10s. 0d., but as a result of certain economies and the success of the Cheltenham exhibition, they were able to conclude the year with a balance in hand of £109 0s. 11d. in addition to the £100 previously invested in National War Bonds. Mr. Bridgeford pointed out,however,that in the coming year the Society's exhibition will be held in London, and that always entailed a very considerable expense and brought in very little in the way of gate-money, consequently the members should not expect so handsome a balance in 1927. The motion was carried unanimously, and it was agreed that £50 of the balance should be placed on deposit. The Report of the Floral Committee was presented by its Chairman, Mr. C. H. Curtis, and accepted.

Mr. L. Collingridge then proposed that Mr. J. M. Bridgeford be President for 1927, and this motion was seconded by Mr. J. S. Brunton, and carried with acclamation. As Mr. Bridgeford came forward to take the chair, the retiring President presented him, on behalf of the Committee, with a framed, enlarged portrait of the members who were present at the outing at Feltham in July last, and also with the Gold Medal of the Society for the many services he had rendered. These gifts came as a great surprise to Mr. Bridgeford, who expressed his very great pleasure at the kindness of the members of the Committee and the honour they had done him.

Mr. Curtis then presented the report of the Henry Eckford Memorial Trustees for the year, pointing out that there was now an effective balance of only about £55 and consequently, unless the Trust Fund was greatly augmented, the award of a medal would cease in about twelve years time. He appealed for further funds, as also did Mr. Bridgeford and Mr. Hugh Dickson, the other two permanent Trustees. There was a prompt response to this appeal, and Mr. Bridgeford himself headed the list of donations with £5 5s. 0d.; other promises were made by Mr. Curtis, Mr. Dickson, Mr. Digges, Mr. Collingridge, Mr. Wheler, Mr. Haslehust, Mr. Christy, Mr. Bartlett and Mr. J. Stevenson, with the result that seventeen-and-a-half guineas were donated in a few moments.

Mr. F. T. Wheler was unanimously elected Chairman of Committee for 1927; Mr. J. M. Bridgeford was re-appointed Treasurer and Mr. A. C. Bartlett, Secretary. Hearty thanks were accorded Mr. L. Collingridge for his services as President during the year and to Mr. E. R. Janes for acting as Chairman of the General Committee during the past season. The whole of the eligible members of the General Committee were re-appointed, and Mr. Janes and Mr. Marshall were added to fill vacancies arising.

The Floral Committee for the ensuing year was then elected, Messrs. E. H. Cox and A. Dawkins acting as scrutineers of the ballot. The result was as follows: Amateurs: Mr. C. H. Curtis, 30 votes; Mr. E. H. Christy, 29; Mr. J. Rogers, 27; Mr. F. J. Cashnella, 22; Mr. H. A. Perkin, 19; Traders: Mr. A. Ireland, 29; Mr. G. H. Burt, 25; Mr. R. Bolton, 23; and Mr. J. M. Bridgeford, 22. Mr. J. S. Brunton was re-appointed Editor of the Society's *Annual*. Messrs. Cobley, Kay and Co., re-appointed as Auditors, and Mr. J. Ticehurst of Eastbourne, was added to the list of members of the Provincial Corresponding Committee in place of the late Rev. J. Jacob.

The Secretary reported that the competition for the prize offered for Essays on Sweet Peas had resulted in a very keen competition, and the judges would have a busy time deciding the merits of the contributions.

Obituary.

Dr. Emile Vidal.—We greatly regret to learn of the decease, at the advanced age of ninty-two, of Dr. Emile Vidal, one of the best-known figures in southern French horticulture. He laboured unceasingly in the interests of agriculture, horticulture and viticulture in the regions of the Var, and was the founder-president of the Société d'Agriculture, etc., du Var. He was a Commander of the Legion of Honor, and correspondent of the Agricultural Academy.

Thomas W. Sanders.—It was with very deep regret that the whole horticultural world learned of the death of Mr. Thomas W. Sanders, F.L.S., who passed away on Wednesday, the 13th inst., after a brief illness. Mr. Sanders was a shining example of those who rise from the ranks by means of their own natural ability, coupled with persistent study and enthusiasm for their work. He was born at Martley, Worcestershire, on November 6, 1855, where his family has carried on the business of small farmers, lime burners and quarriers for several generations. After a comparatively brief period of education at the local school he was apprenticed to a builder, but he greatly disliked this business and expressed a great desire to become a gardener. No doubt it was the influence of his mother, who had a great love for flowers, that led him to this decision; indeed, on two occasions he ran away from home for the purpose of securing employment in a garden, and eventually his father gave in and young Sanders became engaged at a very small wage to an old gardener who took a great interest in him and taught him all he knew with regard to elementary horticultural procedure. He subsequently obtained employment in several large gardens in the country, spent some time at Versailles, and worked in several famous nurseries until, in 1884, he took charge of the gardens and farm of the late Mr. John Wingfield Larking, at Lee, in Kent, where he designed the large winter gardens which were greatly renowned for a long period. Needless to say, all his spare time during his probationary years was occupied in acquiring a good general education and in studying the scientific and theoretical sides of gardening. While still a young man he began to write on horticultural subjects and his writings attracted a good deal of attention, especially as he was opposed to formal gardening and championed the cause of the amateur gardener. At about the time when Mr. Sanders took charge of the gardens at Lee, the late Mr. Shirley Hibberd was founding *Amateur Gardening*, which he edited for a few years, and in 1887, when he relinquished the editorship, Mr. T. W. Sanders was appointed to fill that position. How well he filled that position for nearly forty years is well-known to all who have taken an interest in horticultural publications, for he was able to bring *Amateur Gardening*—the property of Messrs. W. H. and L. Collingridge—into a foremost position among horticultural newspapers. His patience and good humour stood him in good stead during all these years, and he was always ready to advise amateurs concerning their difficulties in gardening, and no matter how insignificant or foolish a question might appear it was always answered in the kindliest fashion, as though the person immediately concerned was of the greatest possible importance in the horticultural world. Mr. Sanders' industry was amazing, as shown by the numerous books he has produced, for probably no horticultural author has so many books standing to his name. For one of these, *The Encyclopaedia of Gardening*, he will always be remembered and admired, and we believe that over a quarter-of-a-million copies of this standard work for amateur horticulturists have been sold. Some of the more important of his other works include *Fruit and its Cultivation*, the fourth edition of which was reviewed in our issue for October 16; *The Flower Garden*; *The Amateur's Greenhouse*; *Roses and their Cultivation*; *Bulbs and their Cultivation*; *Popular Hardy Perennials and Rock Gardens and Alpine Plants*.—In furtherence of his endeavour to spread a knowledge of gardening among amateurs and to encourage them to grow flowers, fruits and vegetables, and compete with each other, he founded the National Amateur Gardeners' Association, of which he occupied the presidency for twenty-one years, and during that period was rarely absent from any of its meetings. Mr. Sanders had a whole-hearted belief in the educational value of travel, and whenever opportunities afforded, he visited continental countries for the purpose of studying horticulture and agriculture, and when, a few years ago, he was chairman of a party of experts who visited Sweden, he was invested by King Oscar with the Knighthood of the Royal Order of Vasa. His interest in the National Chrysanthemum Society was continued over a long period of years, and he was one time Chairman of its Committee. The National Rose Society and the National Sweet Pea Society also had a great friend in Mr. T. W. Sanders who, while not claiming to belong to the old order of florists, had, nevertheless, a wide knowledge of floriculture and took great pains to encourage the raising and exhibition of new and improved varieties of all the popular garden flowers. In his earlier years he associated himself with the co-operative movement and was always present at the great Co-operative Horticultural Exhibitions held at the Crystal Palace, acting as a judge on most occasions. As a lecturer Mr. Sanders had a very happy manner, and was perhaps at his best when answering questions put by members of his audience. At Lewisham, where he resided for many years, he was for some period a member of the Town Council, and founded a Lodge of Freemasonry. He was an ardent Mason and had, we believe, been a Master of the Caxton Lodge. Although his life was a long and very busy one, there is no doubt whatever that his good works will follow him and he will be kept in kindly memory for many years to come. His wife predeceased him by several years, and he leaves a son and daughter to mourn his loss. The funeral took place on Monday afternoon, the 18th inst. when his remains were laid to rest in the cemetery at Hither Green, Lewisham—a cemetery that he himself designed many years ago—amid abundant tokens of the esteem and affection in which he was held. Mr. Sanders' long period of the editorship of one horticultural paper, has, we believe, been exceeded only by the late Dr. Masters, who was editor of *The Gardeners' Chronicle* for forty-one years.

THE LATE T. W. SANDERS.

MARKETS.

COVENT GARDEN, Tuesday, October 19th, 1926.

Plants in Pots, etc.: Average Wholesale Prices.

(All 48's except where otherwise stated).

	s. d. s. d.
Adiantum cuneatum per doz. ...	10 0–12 0
—elegans ...	12 0–15 0
Aralia Sieboldii	9 0–10 0
Araucarias, per doz.	30 0 42 0
Asparagus plumosus ...	12 0–18 0
—Sprengeri ...	12 0–18 0
Aspidistra, green	36 0–60 0
Asplenium, doz.	12 0–18 0
—32's	24 0–30 0
—nidus ...	12 0–15 0
Cacti, per tray —12's, 15's ...	5 0– 7 0
Cyclamens, 48's, per doz. ...	18 0–21 0
Chrysanthemums, in variety, 48's, per doz. ...	15 0–21 0
Crotons, doz. ...	30 0–45 0
Cyrtomium ...	10 0–25 0

	s. d. s. d.
Erica gracilis, 48's, per doz.	24 0–36 0
— 60's, per doz.	9 0–12 0
—nivalis, 48's per doz. ...	24 0–36 0
—60's ,,	12 0–15 0
—72's ,,	8 0—9 0
Hydrangeas, white, 48's, per doz.	24 0–70 0
Lilium speciosum rubrum, 32's, 48's each	2 6—3 6
Nephrolepis in variety ...	12 0–18 0
—32's	24 0–36 0
Palms, Kentia	30 0–48 0
—60's	15 0–18 0
Pteris, in variety	10 0–15 0
—large, 60's ...	5 0– 6 0
—small ...	4 0– 5 0
—72's, per tray of 15's ...	2 6– 3 0
Solanums, 48's, per doz. ...	12 0–18 0

Cut Flowers, etc.: Average Wholesale Prices.

	s. d. s. d.
Adiantum decorum, doz. bun.	— –10 0
cuneatum, per doz. bun. ...	8 0–10 0
Asparagus plumosus per bun., long trails, 6's ...	2 6—3 6
med. sprays	1 6—2 6
short ...	0 9—1 3
—Sprengeri, bun. long sprays	1 6—2 0
med. ,,	1 0—1 6
short ,,	0 4—1 0
Bouvardia, white per doz. bun.	12 0–15 0
Camellias, 12's, 18's per box ...	3 0—3 6
Carnations, per doz. blooms...	3 0—5 0
Chrysanthemums, white, per doz.	2 6—6 0
—bronze ...	2 0—4 0
—white, per doz. bun. ...	15 0–21 0
—bronze, per doz. bun. ...	10 0–15 0
—yellow, per doz. blooms ...	3 0—6 0
—yellow, per doz. bun. ...	12 0–15 0
—pink, per doz. blooms ...	2 6—6 0
—pink, per doz. bun. ...	15 0–18 0
—specimens, per doz. blooms...	12 0–18 0
Cornflower, blue, per doz. bun.	2 6 3 6
Croton leaves, per doz. ...	1 9—2 6
Fern, French, per doz. bun.	10 0–12 0
Forget-me-not, per doz. bun.	10 0–12 0
French Flowers—	
—Acacia (Mimosa), per doz. bun.	12 0–15 0
—Eucalyptus, per pad	7 0—8 0
—Ruscus, green, per pad ...	9 0–10 0
—Myrtle, green, per doz. bun.	1 6—2 0
—Solanum berries, 300's, per pad	8 0—9 0
—Violets, Parma, per bun. ...	2 0—2 6
Gardenias, 12's, 18's per box .	5 0—6 0

	s. d. s. d.
Heather, white, per doz. bun.	6 0—9 0
—pink, per doz. bun.... ...	6 0—8 0
Honesty, per doz. bun.... ...	15 0–18 0
Lapageria, white, per doz. blooms	4 0—4 6
Lilium auratum, per doz. blooms ...	10 0–12 0
—longiflorum long, per doz.	4 0—5 0
—speciosum rubrum, long, per doz. blooms ...	3 6—4 0
— short, doz. blooms ...	2 0—2 6
—lancifolium album, per doz. blooms, long	3 6—4 6
Lily-of-the-Valley, per doz. bun.	18 0–30 0
Michaelmas Daisies, per doz. bun. ...	3 0—6 0
Orchids, per doz.	
—Cattleyas ...	21 0–30 0
—Cypripediums per doz. blooms ...	5 0—6 0
Physalis (Cape Gooseberry,) per doz. bun.	15 0–21 0
Richardias (Arums), per doz. blooms	5 0—7 0
Roses, per doz. blooms—	
—Madame Abel Chatenay ...	2 6—3 6
—Molly Sharman Crawford	2 0—3 6
—Richmond ...	3 0—4 0
—Golden Ophelia	3 0—4 0
—Sunburst ...	3 0—4 0
—Mrs. Aaron Ward ...	2 0—2 6
—Madame Butterfly	3 0—4 6
Scabiosa caucasica, per doz. bun.	5 0—6 0
Smilax, per doz. trails ...	3 0—4 0
Statice sinuata, per doz. bun.	10 0–12 0
Stephanotis, per 72 pips ...	— 4 6
Violets... ...	1 6—3 0

REMARKS.—The colder weather is likely to bring about a general increase in price for all subjects, and an advance in value of Carnations, Roses and other choice blooms was noticeable this morning. White disbudded Chrysanthemums are becoming more plentiful; the latest sorts on sale are Blanche Poitou and Mrs. Roots. The principal coloured varieties are Yellow King, Cranford Yellow, Uxbridge Pink, Delight, Uxbridge Bronze, Almirante, Alcada and Jean Patterson, which is one of the best bronze varieties on sale at the present time. There are also a few good blooms of Market Red. A larger range of exhibition blooms is on offer from 12/- to 18/- per dozen. Bunch Chrysanthemums are somewhat varied in price and quality, those grown indoors receiving most attention, although they are much firmer in price. Chrysanthemums from the open are now, generally, poor in quality. Richardias (Arums) are arriving in much better condition. Lilium longiflorum is still of good quality, but the prices for this flower are advancing. L. lancifolium rubrum is available in greater quantity. More Orchids have been on sale during the past few days. Growers are sending a more regular supply of Cypripediums and Cattleyas have been cheaper owing to a more plentiful supply. Odontoglossum are only procurable when orders are placed two or three days in advance. Camellias comprise the newest subjects in this department. Several boxes of Gardenias have been on sale during the past week, some of the blooms being exceptionally fine in quality. A few bunches of Parma Violets have arrived from the south of France, but at present they are very poor in quality. Other subjects recorded last week from France are increasing in quantity.

Vegetables: Average Wholesale Prices.

	s. d. s. d.
Beans—	
—Forced ...	0 6—1 0
—French. per crate... ...	2 0—3 0
—Runner, bush.	5 0—6 0
Beets, per cwt.	5 0—6 0
Cabbage, per doz.	2 0—3 0
Carrots, per ½ bag ...	4 0—4 6
Cauliflowers, per doz.	2 6—4 6
Chicory Belgian	0 4—0 5
Cucumbers, per doz.	3 6—5 0
—Flats ...	15 0–18 0
French Batavia	2 0—3 0
Lettuce, round, per doz. ...	1 6—2 6
Marrows. ...	2 0—7 0
Mint, forced, per doz. ...	2 0—3 0
Mushrooms	
—cups	3 0—4 0
—Broilers ...	2 0—2 6
—Field	1 0—1 6

	s. d. s. d.
Onions— Valencia ...	8 0–10 0
Parsnips, per cwt. ...	5 0—6 0
Potatos—	
—King Edward ton	£8, £10
—others ton,	£5, £8
Spinach, per bushel ...	3 6—4 0
Sprouts, Brussels per ½ bag ...	3 0—6 0
Tomatos—	
—English, pink new crop ...	6 0—8 0
—pink and white, new crop ...	6 0—8 0
—pink, old crop	2 6—3 6
—pink and white, old crop ...	2 6—8 0
—Guernsey ...	3 0—4 6
—Jersey ...	3 6—5 0
Turnips, per cwt.	5 0—7 0

REMARKS.—There has not been much improvement in trade generally, and conditions in most sections leave considerable room for improvement. The sale of hothouse Grapes is, on the whole, steady, and their values remain about the same as last week. The Apple market is overloaded at the moment, mainly with imported fruits. The average price is low, and altogether the position is satisfactory to no one. Pears continue to arrive from many sources, principally from the continent. English Pears are selling rather slowly, and even high-class varieties are in poor demand at comparatively low prices. Walnuts from France are plentiful at the moment but supplies will fall off appreciably in a few days. A few Chestnuts are coming from France and these are selling fairly well. Tomatos are a rather better trade, doubtless because supplies are lighter. Cucumbers are not plentiful, but even so they are not a brisk business. Forced Beans have been a very slow trade, but the colder weather will help matters in this direction, from the growers' point of view. Mushrooms continue to be a firm trade owing to a scarcity of both indoor and field-grown crops. Green vegetable are in poor demand, and only best Sprouts are selling well. The Potato trade is better and prices all round are firmer.

GLASGOW.

This has been a very quiet week in all sections of the market and no improvement is expected until the miners resume work. Meanwhile money is scarce and traders are restricting their purchases to actual needs. In the fruit department American Apples were cheaper at 11/- to 13/- per case for Jonathan, King David and McIntosh Red; 10/6 for Californian Newton Pippin, while Ben Davis was down to 16/- to 18/- per barrel; Greenings 30/-; King David, 22/- to 25/-; Winesap, 24/- to 28/-; York Imperial, 20/- to 25/-; and Starks, 23/- to 25/-. Winter Nells (Block) Pears were worth from 25/- to 28/- full case, and Beurré de Anjou, 16/- to 22/-. Oranges continue to be dear, Sunkist realising from 24/6 to 31/-, according to counts; Jamaica Oranges, 20/- to 24/-; and South African Oranges, 29/- to 30/-. Oporto Rico Grape Fruit sold for 19/- to 21/- per case; Scotch Gros Colmar Grapes averaged 3/6 to 3/9 per lb; Belgian Grapes, 10d. to 1/-; and Almeria Grapes, 20/- to 32/- per barrel. Tripoli Lemons were worth 9/6 to 11/-; and Malaya Lemons, 16/- to 18/-. Nuts moved freely at the following rates: Walnuts, 10/- per stone; Brazils, 9/6; Cob-nuts, 7/6; and Pea-nuts, 4/6.

After trade being flat to inactive during the greater part of the week, cut flowers were in better demand on Friday and prices improved to the highest level of the weekly period. On comparison, however, Chrysanthemums show a greater reduction in value. The variety Sanctity ranged from 6d. to 9d. for 6's; Dolores, 7d. to 1/-; Le Pactole, 6d. to 1/-; Framfield White, 6d. to 8d.; Freedom, 9d. to 1/-; Rose Maid and Cranfordia, 10d. to 1/2. Betty Spark, in sprays, averaged 3d. to 4d. per bunch. Pink Roses were worth from 3/- to 3/6 per dozen; red and white Roses, 2/- to 2/6. Carnations were worth 2/6 to 3/6; Lilium longiflorum (Harrisii), 3/- to 3/6 per bunch; Smilax, 1/- to 1/3; and Asparagus, 6d. to 1/-.

Tomatos could be bought freely at 6½d. to 7½d. per lb, but a few special fruits made as high as 10d. on Friday. Prices for Lettuces ranged from 1/6 to 2/- per dozen. Cauliflowers realised 1/- to 3/-; Cucumbers, 4/-; French Beans (English), 7d. to 8d. per lb; and French-grown Beans, 3/- to 5/- per cane.

GARDENING APPOINTMENTS.

Mr. James Chitty for the past eight-and-a-half years gardener to Major R. B. Sidebottom, Rothamsted, Harpenden, Hertfordshire, as gardener to A. S. Bowlby, Esq., Gilston Park, Harlow, Essex. (Thanks for 2/- for R.G.O.F. Box.—Eds.)

Mr. J. Keir, for the past nine years, gardener to Captain Gerald Robarts, Lillingstone Dayrell House, Buckingham, as gardener at Radley College, Abingdon, Berkshire. (Thanks for 2/- for R.G.O.F. Box.—Eds.)

ANSWERS TO CORRESPONDENTS.

APPLES WITH BROWN MARKS.—*D. and W. C.* No fungus could be found it the brown parts of the Apples sent. The trouble appears to be a physiological disease known as Internal Breakdown, for which, like other maladies of the Apple (Glassiness and Bitter-Pit) no complete explanation has been forthcoming in spite of long investigation. Drs. Franklin Kidd and Cyril West in *Special Report* No. 23, Food Investigation Board, H.M. Stationery Office, 1925) state that temperature of storage and period on the tree are factors concerned.

BLACKBERRY.—*H. B., Matlock.* The Blackberry is Rubus plicatus, and considered a true species by the leading, modern authorities of the British Rubi. It is recorded from very many counties in Britain, and grows on heaths and moors, especially on light, sandy soils. The short stems grow more or less erect.

CHESTNUT BARK DISEASED.—*W. R.* The section of Chestnut bark received for examination is covered with Algae and Lichens in the first place, and afterwards a fungus has developed on these growths. The name of the fungus cannot be determined in its present state, but it is not one that is parasitic upon timber. The growths may be removed by spraying the leafless trees with a caustic wash.

NAMES OF PLANTS.—*E. H. B.* 1, Thuya orientalis; 2, not recognised; 3, Berberis species; 4, Gaultheria procumbens (Creeping Wintergreen); 5, Astrantia major; 6, Veronica lycopodioides; 7, Hypericum patulum; 8, Pernettya mucronata; 10, Artemisia lactiflora; 10, Scrophularia aquatica variegata. *A. B. C.* Chrysanthemum Debutante. *H. G. M.* 1 and 2, we cannot undertake to name florists' flowers; 3, Artemisia lactiflora; 4, Galium species. *J. F. S.* a, Thymus Serpyllum (citriodora) variegata; b, Tradescantia virginica; we cannot undertake to name florists' flowers. *A. E. F.* Haemanthus virescens var. albiflos. *F. U.* Polygonum Baldschuanicum. *H.K.* Crataegus tanacetifolia. *F. W. B.* 1, Cotoneaster frigida; 2, Olearia Haasti; 3, Cotoneaster Henryana; 4, C. divaricata; 5, specimen too scrappy for naming; 6, Cornus Mas. *H. C. C.* 1, Jasminum revolution; 2, Pyrus rotundifolia; 3, Crataego-Mespilus grandiflora; 4, Fagus sylvatica var. heterophylla; 5, Taxodium distichum; 6, Crataegus Carrierei; 7, Ailanthus glandulosus. *J. V.* 1, Ligustrum lucidum; 2, Cleyera Fortunei variegata; 3, Leptospermum scoparium; 4, Teucrium Chamaedrys; 5, Prunus Jacquemontii; 6, Sedum spectabile; 7, Morus (Mulberry) species; 8, Clerodendron foetidum. *F. J. W.*—Myrtus communis.

NAMES OF FRUIT.—*R. G.* Apple Curl Tail. *J. S. C.* Pear Beurré Superfin. *P. C.* 1, Souvenir du Congres; 2, Beurré Hardy; 3, Pitmaston Duchess.

Communications Received.—J. H.—U.—R. L. B.—E. C. V. G.—W. F.—W. A.—H. B.—E. G. K.—R. D. D. B.—J. T. B.—H. F.—R. H. J.—W. K.—G. G. P.—Smilax—R. G.

SCHEDULES RECEIVED.

BURTON-ON-TRENT and SHOBNALL CHRYSANTHEMUM SOCIETY.—Thirty-sixth annual show, to be held in the Town Hall, on Saturday, November 13. Secretary, Mr. T. M. Vaughan 137, Forest Road, Burton-on-Trent.

FARNHAM AND DISTRICT HORTICULTURAL SOCIETY.—Show to be held at the Corn Exchange, Farnham, on Wednesday, November 10.—Secretary, Mr. S. F. Chuter, Roseleigh, St. Cross Estate, Farnham.

HORNSEY AND DISTRICT CHRYSANTHEMUM SOCIETY.—Thirty-seventh exhibition to be held at the Drill Hall, on November 12 and 13.—Secretary, Mr. F. Solley, 9, South View Road, Hornsey, N.8.

IPSWICH AND DISTRICT GARDENERS' AND AMATEURS' ASSOCIATION.—Show to be held in the Corn Exchange, on Thursday, November 18.—Secretary, Mr. R. Ball, 39, Withipoll Street, Ipswich.

THE
Gardeners' Chronicle
No. 2079.—SATURDAY, OCTOBER 30, 1926.

CONTENTS.

Alpine garden—
  Modiola geranioides 346
  Saxifraga aquatica... 346
  Schizocodon soldanelloides 346
Alpine plants, fragrant 357
Argentine, fruit farming in the 342
Books, notices of—
  Lime in Agriculture 353
  Roses and Their Culture 354
  Tomato Production 354
Bulb garden—
  Amaryllis Belladonna 346
Cabbage butterflies ... 357
Classical and legendary gardens 350
Clusius, memorial to... 342
Derris 342
Florists' Flowers—
  New Carnations ... 346
Flower garden—
  Autumn Delphiniums 346
  Paradiseas 346
Fruit crops, remarks on the condition of the 355
Fruit garden—
  Apples and Pears in Morayshire ... 355
  Apples of high colour 355
Fruit register—
  Plum Jodoigne Green Gage 355
"Gardeners' Chronicle" seventy-five years ago 343
Garden notes from south-west Scotland 352
Germination, the effect of lead and other metals on 341
Gladiolus primulinus, hybrids of 357
Glasnevin, notes from 352
Hardy flower border—
  Anemone japonica... 347
  Salvia virgata nemorosa 347
  Sida Napaea ... 347
Horticulture in the Island of Guernsey 348
Indoor plants—
  Chirita Marcanii ... 353
  Dipladenia boliviensis 353
  Maurandya Barclayana 353
Lakes and pools, artificial 353
Obituary—
  Spinks, W. 350
  Vincent, R., Junr.... 350
  Windle, T. H. ... 359
Orchids, new hybrid... 353
Parks and gardens, public 354
Plums, two crops of ... 357
Rohdea japonica ... 347
Rose garden—
  Planting 348
  Rose Gruss an Teplitz 348
Rubber exports, the restrictions of ... 342
Rural amenities ... 342
Salvia involucrata var. Bethellii 356
Societies—
  British Mycological 358
  Guildford and District Gardeners'... 357
  Manchester and North of England Orchid 358
  National Chrysanthemum 358
  Peebles Chrysanthemum 357
  Reading and District Gardeners' ... 357
  Royal Horticultural 358
  United Horticultural Benefit and Provident 357
Stansfield, Mr. W. H... 342
Sweet Pea exhibition in Belgium ... 342
Trees and shrubs—
  Enkianthus ... 349
  Forsythia ovata ... 349
Vegetable garden—
  Seasonable work ... 356
Week's work, the ... 344
Willett Memorial ... 343
Wisley, notes from ... 351

ILLUSTRATIONS.

Amaryllis Belladonna at Wrest Park 346
Chirita Marcanii 343
Chrysanthemum alba 345
Guernsey: views of the horticultural industry in, 348 349
Plum Jodoigne Green Gage 355
Proustia pyrifolia 350
Rohdea japonica variety Tamajishi 347
Salvia involucrata var. Bethellii 351
Stansfield, Mr. W. H., portrait of 342

Average Mean Temperature for the ensuing week deduced from observations during the last fifty years at Greenwich, 46·3.

Actual Temperature—
The Gardeners' Chronicle Office, 5, Tavistock Street, Covent Garden, London, Wednesday, October 27, 10 a.m. Bar. 30·1. Temp. 45°. Weather, Bright.

The Effect of Lead and other Metals on Germination.

Germination in the majority of cases is so swift and sure and to the casual eye so easy that there might seem no need for the focussing of "the prying eye of science" on the phenomenon, and, indeed, that is perhaps why even at the present time so little is known of the process. The conditions for germination have, of course, been explored and the order of events which take place as the seedling unfolds has been ascertained. The conditions for germination are well known: a certain range of temperature, a supply of water and of oxygen. The order of events is absorption of water whereby the dry and dormant seed swells and becomes active; absorption of oxygen as a result of which the essential services of life are instituted. With the absorption of oxygen chemical changes are set going, or at all events speeded up. By the union of the oxygen with reserve sugars or other combustible materials contained in the seed, energy is liberated for the carrying on of the essential services required by things if they are to live. Presently the root pushes out from the micropyle, fixes itself wedgewise in the soil and provides a fulcrum on which the young shoot may lever itself out from the firm enclosure of the seed-coat. But if this represents in summary form all that is known of germination it is evident that there remains much to be learned. The secret of germination, the nature of the inward and vital grace whereby these outward and visible signs of germination are contrived, still remains to be discovered. There is, however, some ground for believing that growth which manifests itself in germination is a process which is activated and controlled by specific chemical substances, or, as they are sometimes called, hormones. On this view a cell or a group of cells begins to grow as the result of chemical stimulation, goes on growing so long as the stimulus lasts and ceases either when the hormone is used up or more probably when another opposing or inhibiting hormone arises and puts a stop to growth. On this view it is possible to comprehend—albeit but dimly—the curious zonal growth of roots. At first confined to a narrow zone close behind the apex, growth spreads, as the first zone completes its elongation, to the next and no less narrow zone, so that at at any given moment only a very restricted region of the root is in active growth; a highly advantageous state of affairs, for by it the root tip is forced as a wedge might be forced by pressure into ground even though the resistance of the soil be very great. The evidence in support of this view of growth being the outcome of chemical stimulation is at present slender, but nevertheless strong enough to justify the formulation of a working hypothesis. Experiments carried out recently by members of the medical faculty of Liverpool University* have yielded results which we think lend some measure of confirmation to the hormone hypothesis. Seeds and bulbs were grown in water containing small quantities of metals—lead, copper and other. So far as copper is concerned, the results do not appear to present any novel feature. Even extremely minute traces of this highly poisonous metal suffice to destroy the life of the plant. But with lead the results are different. With small doses growth is arrested, but with yet smaller doses germination begins, the seedling root pushes out from the seed and then ceases to grow. If, however, the seedling so treated be removed from contact with water containing lead, as, for example, by placing them in contact with pure water, germination which was arrested is renewed and the seedlings develop as though they had not been subjected to any adverse influence. In other words the effect of lead, and it may be added certain other metallic elements, if the quantities given be not too large, is to arrest growth without impairing vitality. The explanation would appear to be that the minute traces of lead absorbed by the seedling suffice either to destroy or to prevent the development of the hormone on which growth depends, and when the noxious element is removed the root is free to pursue its normal course. It may perhaps be conjectured that the natural dormancy of seeds, which is in itself one of the most wonderful phenomena in Nature, is likewise due to the presence of an inhibitory substance in the seed. Here again there is some slight evidence in favour of the hormone hypothesis. Seeds—of Cabbage for example—if set to germinate in water containing a very small quantity of the ground up husks exhibit a remarkable arrest of growth. They lag a long way behind similar seeds germinated in pure water. When, however, the seeds, the growth of which has been checked by these means, are placed in pure water they begin at once to germinate at a normal rate. It is certain that we are only at the beginning of very wonderful discoveries with respect to the influence of minute traces of metals in the growth and development of cells and tissues, and it is to be hoped that further researches will be made into the obscure but vitally important subject of germination and growth.

Beautifying Hampton Court Surroundings.—If the town-planning scheme which has just been adopted by the District Council of East and West Molesey fructifies, it will add greatly to the amenities of Hampton Court. It is proposed to lay-out the river frontage on the Surrey side of the Thames as a public promenade for about three-quarters-of-a-mile. This will stretch from Hampton Court Bridge, which is to be rebuilt, to well beyond the bend in the river opposite the Palace Gardens. A width of a thousand feet is required for the scheme, so that the land beyond the promenade may be used as a public open place. At present there is a long row of house-boats moored by the river bank, and it is intended that this picturesque feature will be retained. The scheme meets with general approval in the Molesey district, and it is hoped to receive the support of H.M. Office of Works, the Thames Conservancy and the two County Councils which are intimately concerned.

Date of Paris Autumn Show..—We learn from our contemporary, *La Revue Horticole*, that an error was made in the publication in the French press of the dates of the Paris Autumn Show, and that the correct dates were October 29 to November 7, not September 29 to October 5, as previously stated.

Legacy to a Gardener.—Mrs. Mary May Hermon, of Doublebois, Liskeard, Cornwall, who left £41,559, made many bequests to her employees, including one of £200 to her gardener, Mr. Frank Atkins.

Knole Park Threatened.—We are glad to learn that the proposal which had been made to make a road through the beautiful grounds of Knole Park, Sevenoaks, has been withdrawn, largely in consequence of local opposition. Knole, the property of Lord Sackville, with its beautiful and historic park, has always formed a great feature of local interest and is the delight of all the residents as well as of visitors. It would have been nothing short of a calamity to have taken a road through it, which would have had the effect of cutting off the town entirely from the park. Lord Sackville, who has been one of the chief opponents of the scheme, readily agreed, as a condition of withdrawal, that a part of the park should be preserved as an open space during his lifetime.

Paris Municipal Nurseries.—It is announced that, from the present time onwards, visitors to the Paris Municipal greenhouses at Auteuil will pay a fee of two francs each, or permanent "season" tickets can be obtained for one hundred francs per person, or two hundred francs for a family. Special terms will be accorded to artists and others desiring to illustrate the plants. Hitherto there has been no fee for visiting the houses, and it remains to be seen whether the experiment of imposing a charge is a success or no.

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*The effect of Metallic Ions on the growth of Hyacinths by W. Blair Bell and J. Patterson. *Annuals of Applied Biology* XIII. 2. May 1926; and The Influence of Lead, etc., on the Germination of Seeds by J. Delling. *loc.cit.*

Lectures at the Royal Society of Arts.—In the series of lectures arranged to be delivered before the members of the Royal Society of Arts at John Street, Adelphi, W.C.2, during the 1926-7 session—which, by-the-way, is the 173rd session the Society has held—there are several of horticultural or agricultural interest. On Tuesday, November 2, Sir Stanley Bois will lecture on "The Importance of Rubber in the Economic and Social Progress of the World"; on Wednesday, November 10, Sir Thomas H. Holland, Rector of the Imperial College of Science and Technology, will discuss "International Interests in Raw Materials"; on Wednesday, November 17, Mr. Thomas Brough, J.P., will lecture on "Artificial Silk"; on Wednesday, November 24, Mr. Warre S. Bradley will discuss "Industrial Welfare in Practice"; on December 8, the Burgomaster of Antwerp, M. van Cauwelaert, will deliver what should prove a very interesting lecture on "The Port of Antwerp"; and on Friday, December 10, Mr. C. H. Bompas will give an account of "The Calcutta Improvement Trust."

Derris.—A paper entitled "Derris as an Insecticide," by Messrs. Arthur Kelsall, J.P., Spittall, R. P. Gorham, and G. P. Walker, is published in the *Fifty-sixth Annual Report of the Entomological Society of Ontario.* The authors give a full account of the insecticide, the results of experiments made with it, its use in controlling various pests of the Potato and other crops, also its use in killing house flies, clothes' moths and vermin. Derris is derived from species of Deguelia, principally D. elliptica and D. uliginosa. These are tropical shrubs and cultivated principally in the Federated Malay States. Originally Derris was used as a poison on arrows in Malay and Borneo and also as a fish poison. Its first use in gardens is attributed to the Chinese who chopped fresh roots and pounded them in water, using the milky fluid obtained for spraying plants. Its action on insects is to set up paralysis, resulting in death. Its use is especially recommended for spraying vegetables as Derris is practically non-poisonous to man. Slugs travelling over ground which has been lightly dusted with Derris are said to have died in a few hours.

Vandalism in a Northern Public Park.—We are concerned to learn that wanton damage has been done to various trees and shrubs in the Shibden Park, Halifax, which was only recently opened to the public by the Prince of Wales. Amongst the trees destroyed is the young Oak which the Prince formally planted to commemorate his opening of the park. This tree has been replaced by another Oak.

Preservation of Rural Amenities.—At the annual gathering at Stratford-on-Avon of the members of the Town-Planning Institute, the possibilities were discussed of the formation of a Joint Council for the Preservation of Rural England, a scheme which is favoured by such influential bodies as the Institute itself and the Royal Institute of British Architects, among many others. The object of the Society would be to encourage interest in the preservation of the rural parts of the country, local authorities would be asked to co-operate, the Council would give advice where required, and would serve to link up the small local organisations into a body powerful enough to influence public opinion and support any local body which was desirous of preventing the threatened destruction of local amenities. Such a Council would earn the gratitude of all who value the beauty of rural England, and who fear, as indeed there is reason to fear, that the present tendencies towards industrialisation and rapid building will go far towards destroying it. Stratford-on-Avon itself is fortunate in that it is not immediately threatened with industrial development, and measures are being taken to preserve the future amenities, not only of Stratford itself, but of the larger area of which it is the centre. The south Midlands Regional Planning scheme covers a region extending from Stratford on the north to Broadway Hill on the south, from the rural district around Nuneaton in the east to the Borough of Bewdsley in the west, comprising about twenty-four local authorities, who are co-operating in the endeavour to prevent incoherent town-planning and building, duplication of essential public works, and unintelligent road-development. There is no doubt that the broad survey of an area of considerable size enables a clearer and more impartial view to be taken of this important question. Although the actual town plans of these associated local authorities are worked out in detail under their own schemes, their association in a joint endeavour to solve the problem of the region as a whole opens up wonderful possibilities of invaluable co-operation.

Mr. W. H. Stansfield.—Mr. W. H. Stansfield is a prominent personality in the Southport district, where he conducted a nursery business for very many years. He was born at Todmorden in the Parish of Stansfield, on the edge of Stansfield Moor, a rider of the Pennine range. Early in life he was employed in the cotton industry, but his proclivities were more towards an outdoor occupation, and he abandoned the cotton factory to take up employment in the nursery of Messrs. Abraham Stansfield and Sons, of Todmorden, a firm which specialised in hardy Ferns, their collection being one of the finest in the country. Mr. Herbert Stansfield, of Sale, Manchester, is still carrying on the traditions of the family as a trade grower of hardy Ferns, whilst his brother, Mr. J. F. Stansfield, of Reading, is regarded as one of the foremost pterodologists in the country, and specially interested in British Ferns. After a couple of years at Todmorden, Mr. Stansfield removed to Manchester to take employment in a new business under the management of Mr. Abraham Stansfield, junr. During a visit to one of the horticultural shows at Old Trafford he met the late Mr. Amos Perry, who was then foreman to Mr. T. S. Ware, of Hale Farm Nurseries, one of the pioneers in the hardy herbaceous plant trade, and as a result became engaged in the Hale Farm Nurseries. Here Mr. Stansfield gained considerable experience in alpines and hardy herbaceous plants, and he states that he owes a depth of gratitude to the late Mr. Perry for the help and encouragement he gave him. His next move was to Manchester, where he secured a position as foreman to the late Mr. Chas. M. Pendleton, who was a very keen business man. In 1875 Mr. Stansfield decided to engage in business on his own behalf in Southport, and there he built up a very successful business in Cambridge Road and Kew Gardens Nurseries. Mr. Stansfield has always been deeply interested in alpines, and since retiring from business he has collected alpines in Switzerland, Italy, France and Spain. This summer he paid a visit to the central Pyrenees and returned again there in September. He has visited the habitats of many of our native alpine plants and Breadalbane and the Grampians are familiar grounds to him. During one of his visits he had the good fortune of finding one of Don's lost plants, Eriophorum alpinum. He has also visited the mountains of Cork, Kerry, Galway and Sligo, and has collected in county Clare and Limerick. His knowledge of the Welsh flora is also extensive, and he has frequently visited the Snowdon range, whilst the mountains in the lake district are as familiar to him as the streets of Southport. Mr. Stansfield has for some time been a member of the Southport Town Council, and he is a former President of the Southport Society of Naturalists.

MR. W. H. STANSFIELD.

The Restrictions of Rubber Exports.—Last Saturday the Colonial Office issued the new regulations controlling, from November 1 next, the export of Rubber from Ceylon and Malaya for the ensuing twelve months. The quantities which may be exported will depend on the average price ruling in London during each previous quarter, but it is definitely fixed that the percentages will not be increased by more than one hundred or decreased by less than sixty. A *Reuter* message states that the new yearly scale for Singapore assesses the standard productions for holdings of over twenty-five acres as 60 lbs. per acre from areas planted in 1922, to 300 lbs. per acre from areas planted previously to 1920.

London a Poor Market for Ontario Apples.—According to a report of the Ministry of Agriculture for Ontario, imports of Apples into this country were sent to London, Liverpool and Glasgow, and the London market gave the worst returns. Twenty-four cars, states the report, including eight cars of boxed fruit, were sold in London and Southampton by five different firms, and in no instance did the net returns equal the guarantee. The poorest prices were realised by the variety McIntosh. Boxed Apples found a good market in Glasgow, but they brought poor prices in London, just like the barrelled Apples, and in one instance it is stated part of a car-load was re-shipped from London to Glasgow for sale. The *Report* states that from one season's experience Ontario might well confine her exports to Liverpool, Manchester and Glasgow, leaving the southern markets to other shippers.

Memorial to Clusius.—On the 19th of October, a wreath of flowers was placed on the tomb of Charles de l'Escluse (or Carolus Clusius) in celebration of the 400th anniversary of his birth the orison being pronounced by Dr. de Lint. De l'Escluse, to whom is ascribed the production of the first garden Tulips, is buried in the Pieterkerk at Leyden, in Holland; but he was either a Belgian or a Frenchman—it does not seem very certain which—and is said by some authorities to have been born at Arras. The ceremony of laying the wreath on the tomb was followed by a meeting in the great hall of the University at Leyden, at which a lecture on the life of de l'Escluse was delivered by Dr. Hunger, and an exhibition of objects connected with the life and work of de l'Escluse was arranged in the Cloth Hall.

Sweet Pea Exhibition in Belgium.—The fourth Sweet Pea Exhibition is to take place in the Botanic Gardens, Brussels, from the 25th to the 27th June, 1927, and the schedule is already published. The Belgian Minister of Agriculture has promised his patronage.

Fruit Farming in the Argentine Republic.—It is not generally recognised that, if it were not for its meagre rainfall, the Argentine Republic, which stretches across the continent of South America from the Andes eastwards to the sea, would be one of the finest fruit-growing countries in the world. As it is, in the few parts which are watered by rivers, such as San Rafael, many fruits are grown to perfection, including Grapes of all kinds, Plums, Pears, Apples, Peaches, Cherries, Melons and also Nuts. Grapes from the Argentine are already renowned for their quality. There is, however, a scarcity of trained workers, little spraying is done, the trees are not skilfully pruned, and for these reasons the volume of superior fruit harvested is relatively small. At present there are about 6,000 acres of fruit trees in the San Rafael district, and several of the most successful orchards are owned by British horticulturists. The bulk of the fruit grown is purchased for consumption in Buenos Aires and the other large towns in the republic, also for export; last year 1,600 tons were exported to the United States and to Great Britain, and a like quantity to Brazil and Uruguay, the fruits exported being mainly Grapes. It seems a little remarkable that quite a quantity of fruit is imported from abroad—Apples and Pears from the United States and Canada, Raisins from California, Prunes from France, although nearly all the dried fruits purchased abroad could be grown and dried equally well at home. The chief railway company in the country has a nursery garden at San Rafael, where experiments are carried on in the different branches of horticulture, and demonstrations in pruning, etc., are given to fruit growers; large quantities of young fruit trees of good commercial varieties are also grown, and sold at cost price to the farmers. The work is in charge of specially trained horticulturists, who give free advice and assistance where required.

Zoological Professor at Versailles.—A Professor of Zoology and Entomology was appointed at the Horticultural College, Versailles. The competition for this position was held at the French Ministry of Agriculture, before a specially appointed jury, on October 18.

Conference Pear in America. — In trial with numerous other varieties of Pears at South Haven Experiment Station, Michigan, U.S.A., the variety Conference proved to be one of the most outstanding sorts and is recommended by the Station as worthy of trial throughout those portions of the State where Pears are commonly cultivated. The variety does not appear to have been grown by American nurserymen hitherto, but the Experiment Station and one or two American nursery firms are now propagating it. We may remind our American friends that Conference is one of the most reliable croppers of all Pears in this country and is a variety of very good quality. Moreover, the tree is a good grower, robust, and is grown in large quantities in this country for market purposes.

International Bureau of Allotment Holders.—An International Conference has just taken place in Luxembourg, attended by about forty delegates from various allotment holders' associations in different European countries. England, France, Germany, Austria, Belgium Switzerland and Luxembourg were all represented, and letters expressing willingness to join the proposed federation were received from Denmark, Holland and Italy. The President of the Conference was the aged Abbé Lemire, who did so much to foster the growth of allotment holdings in Belgium and in other European countries during war time.

Willett Memorial Park at Chislehurst.—For some years past a scheme has been in hand for the purchase of about ninety acres of wooded, common land at Chislehurst as a memorial to the late Mr. William Willett (the originator of "summer time"), which is to be vested in the National Trust for the perpetual use of the public. The sum of £12,000 will be required for this purpose, out of which up to the present £7,000 has been subscribed. This site has been selected as it was there that Mr. Willett lived and was buried, and there he thought out his beneficent scheme for providing the working public with more hours of sunlight for their recreation. It is to be hoped that the remaining £5,000 will be collected before the end of the present month, otherwise the acreage to be purchased may have to be curtailed; and in view of the rapid absorption by the builder of this beautiful part of the country in the immediate vicinity of London this would be most undesirable.

Appointments for the Ensuing Week.—MONDAY, NOVEMBER 1: Romsey and District Gardeners' Association's meeting. TUESDAY, NOVEMBER 2: Royal Horticultural Society's Committees meet; Royal Caledonian Horticultural Society's meeting; West of England Chrysanthemum Society's show (three days). WEDNESDAY, NOVEMBER 3: Faversham Chrysanthemum Association's show (two days); Forest Hill Chrysanthemum Society's show; Kingston, Surbiton, The Dittons and District Chrysanthemum Society's show; Highgate Chrysanthemum Society's show (two days); Glasgow and West of Scotland Horticultural Society's Annual Meeting; Guildford and District Chrysanthemum Society's show (two days); Winchester Gardeners' Association's meeting. THURSDAY, NOVEMBER 4: National Chrysanthemum Society's show (two days); Taunton and District Chrysanthemum Society's show; Jersey Gardeners' Society's show. FRIDAY, NOVEMBER 5; Orchid Club meeting; Dundee Horticultural Society's lecture. SATURDAY, NOVEMBER 6: Accrington and District Chrysanthemum Society's show; Blackburn Horticultural Society's meeting.

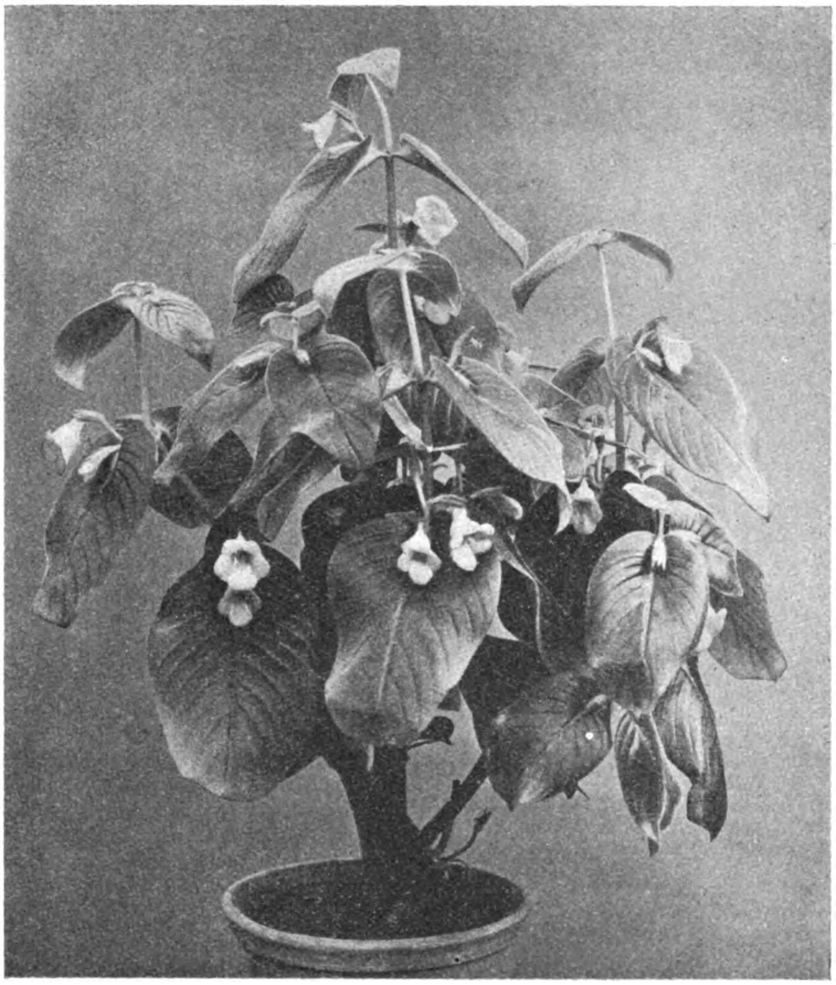

FIG. 154.—CHIRITA MARCANII.

R.H.S. Award of Merit, October 19. Flowers yellow. Shown by the Director, Royal Gardens, Kew.

(see pp. 337, 353).

"Gardeners' Chronicle" Seventy-five Years Ago.—*Behaviour of Plants in the Throat of a covered-up Coal Pit.*—Allow me to tell you something about a plant that may be nearly as surprising to some of your readers as toads and frogs living in confinement in stones and trees. It is no uncommon thing, when a coal-pit is old and worn-out, for a crop of vegetables to take possession of the upper parts of it; even rare plants will sometimes be found in such places —but how they came there, I know not. It happened, some years ago, that an old pit, with an abundance of vegetation about its mouth and also down part of its throat, had to be covered up; wood was laid over its mouth, and turf was laid over the wood; the object of the covering was to allow no current of air in the pit. After remaining in that state for some years, this season the mouth of the pit was uncovered, and all traces of the former vegetation had disappeared, except one plant, and it was so greatly changed in appearance, that it took a few minutes to ascertain what the strange-looking thing was or had been; but there it existed, living and growing rapidly, and, as it could not get upwards, it was making its way downwards as fast as it could, and when it was brought to light its extremities had reached nearly three fathoms down the pit. *Peter Mackenzie, West-plean, Stirling.* [This was we presume, a Rhizomorpha; the woody mycelium of some Boletus-like plant.]. *Gard. Chron., November* 1, 1851.

Publications Received. — *Modern Gardens, British and Foreign.* Text by Percy S. Cane. Special Winter Number of *The Studio,* 44, Leicester Square, W.C.2. Price, in wrappers, 7/6 net; in cloth binding, 10/6 net.

The Week's Work.

THE ORCHID HOUSES.

By J. COLLIER, Gardener to SIR JEREMIAH COLMAN, Bart., Gatton Park, Reigate, Surrey.

Vanda.—The tall-growing members of the Vanda tricolor and V. suavis type are very handsome Orchids when well cultivated, but, unfortunately, they are not well adapted to decorative purposes and are not generally grown and appreciated, but a few hints on their cultural requirements may prove useful to those Orchid lovers who cultivate them. At the end of the present month or the beginning of November, when the sun has lost its power, is the best time to re-pot or re-surface them, as they are commencing to root freely and will continue to do so all through the winter. It is not necessary or advisable to disturb plants that are well-furnished with leaves, unless a larger receptacle is needed, but some of the surface materials may be removed and fresh compost substituted. Specimens that have lost some of their lower leaves and have become leggy may be taken out of their receptacles and, when it is found that they have roots some distance up the stem, so much of the lower part of it may be removed as will bring the lowest pair of leaves, when the plant is again placed in the pot, almost down to the rim.

Re-potting.—After placing the plants in position arrange a few large crocks in the bottom of the receptacle, cover them with Spagnum-moss and spread the lowermost roots on them, then carefully work in some clean crocks and clean, rough Sphagnum-moss between the roots until the top of the pot is reached, finishing with clean picked Sphagnum over the surface. Each stem should be made quite secure by tying it to a neat stick. After repotting or top-dressing the plants they will not need water for a few days, when they should be watered thoroughly. After, whenever the surface moss appears to be dry, a light sprinkling with a rose can will suffice. The plants should be grown in an intermediate temperature and the leaves and stems sponged frequently with a suitable insecticide to cleanse them from dirt and insect pests.

Vanda Kimballianum.—This Vanda and the chaste V. Watsonii are developing their flower spikes, and until the latter are removed it will be necessary to keep the plants well supplied with water. When the flowering period is passed only sufficient moisture will be needed by the plants to maintain the leaves in a firm, plump condition.

THE KITCHEN GARDEN.

By F. STREETER, Gardener to LORD LECONFIELD, Petworth Park, Petworth, Sussex.

Celery.—Endeavour to complete the work of earthing-up Celery before very bad weather sets in. Owing to generous supplies of soot this crop is looking very much better than I have seen it for some years. Place a peg in the centre of each row so that when sowing Peas next season on the sites the drills will be made in the right position.

Runner Beans.—So soon as the plants are destroyed by frost they should be pulled up, stripped from the stakes and the ground cleared and cleaned. Tie the stakes in bundles if they are sound enough for use another season, and put them under cover; they should be serviceable for at least two years if properly treated.

Maincrop Potatos.—I am afraid that many maincrop Potatos are diseased, therefore it will be advisable to examine the tubers so soon as this can be done. Keep the clamps well protected with mats, etc., while the inspection is being made. Continue to use plenty of lime as previously advised to keep the tubers sweet and clean.

Cabbages.—Examine the rows for failures and make good vacancies with plants drawn from the seed-bed. Set them firmly in the soil and use the hoe between the rows. The latest sowings should be pricked out into skeleton frames quite close together; these plants will form a plantation to follow the main plantings when they are cut.

Turnips.—Autumn-sown Turnips have done exceptionally well this season; the first sowings are in use and the latest making good bulbs and growing very quickly. Many Turnips that were intended to supply greens in the spring are fit for use owing to the rains, which have proved very beneficial to all growing crops.

HARDY FRUIT GARDEN.

By W. AUTON, Gardener to VISCOUNT ELVEDEN, Pyrford Court, Woking, Surrey.

Raspberries.—Where existing plantations of these fruits are becoming unprofitable, opportunity should now be taken of planting fresh ones. Seeing that the summer-fruiting varieties will bear no crop until the second year, it is desirable to leave old plantations to carry on supplies and make new ones on fresh sites. If the ground has been dug deeply and well manured, planting may be carried out forthwith. If planted in rows it is preferable to make the rows north and south, and they should be at least five feet apart, allowing a space of two feet from plant to plant. Where late Raspberries are in request a row or two of an autumn-fruiting variety should be added. Raspberries are essentially surface-rooting subjects and need a free root-run, hence deep surface cultivation is not practicable, but annual top-dressings of organic manure are very beneficial.

Black Currants.—Although many advantages accrue from pruning Black Currants immediately after the crop has been gathered, exigencies of labour sometimes prevent this being done. The sooner it is done now, however, the better will it be for the ensuing year's crop. The quality of the fruit is sure to be poor on overcrowded bushes, and all old wood that can possibly be done without should be removed, leaving the young growths of the current year to carry the next crop.

Strawberries.—Newly planted Strawberry beds should be gone over for removing all runners. Growth has not been very vigorous this season, owing probably to the dryness of August, September and early October. Use every favourable opportunity to work the Dutch hoe through the beds to give the plants every encouragement to continue growing for so long as possible. Old beds should also be kept free from weeds and have dead leaves removed.

THE FLOWER GARDEN.

By F. C. PUDDLE, Gardener to LORD ABERCONWAY, Bodnant, Taly-Cafn, North Wales.

The Rock Garden.—It is a wise practice to make the rock garden tidy at this season. All decaying vegetation should be removed, and any rampant-growing plants which have outgrown their space to the detriment of their neighbours should be cut back. Fallen leaves should be collected periodically so that they do not accumulate in odd corners or they may cause damping of the plants in addition to forming harbours for slugs. It is generally advisable to afford some protection from excessive wet during the winter months, to the rarer and more difficult alpines, especially those having hairy foliage. The best method is to place a sheet of glass over them which should be supported on wires so that the air can still circulate freely amongst the plants. Some growers object to these glass protectors as being unsightly, but when they safeguard the lives of choice plants I think that there is every justification for their use. We may do much with well-planned rockwork and suitable soils to provide congenial homes for alpines, but we cannot reproduce that rarified atmosphere which is the natural environment of these plants of the higher Alps. In their case, it is damp which kills and not frost, consequently protection is more necessary in mild and humid districts than in the drier and colder parts of the country.

Protection from Slugs.—Omphalodes Luciliae, Campanula Zoysii and similar plants, whose crowns are liable to be eaten by slugs during winter, should be protected from these pests by means of zinc collars placed around the plants. Instructions for making the collars were given in these notes in the issue of January 16. Certain herbaceous plants will also benefit by being protected in the same manner; these include Delphiniums, Asters, Thalictrum dipterocarpum, Platycodon grandiflorum and Dictamnus. If the zinc collars are placed in position now much damage may be prevented.

Herbaceous Borders.—The hardy flower borders are still bright with Asters and other late-flowering plants, but the season's display will soon be over. When the plants pass out of flower the growths should not be hastily removed, but time should be given to allow the sap to recede naturally so that no loss of nutriment occurs. Unless it is intended to trench and replant the borders, the tops of the herbaceous plants may well be left until the New Year, for the warm, brown tints of the withered stems are very pleasing during November and December, and they are certainly more picturesque than a scene of bare earth and labels, which is the usual appearance of the herbaceous border after the plants have been cut down. Many gardeners are so fully occupied with the planting of trees and shrubs during autumn that the flower borders have to wait until spring. The majority of herbaceous plants may be transplanted successfully at that season; there are some, however, which need to be transplanted in the autumn, including Delphiniums, Paeonies, Anemone japonica and Oriental Poppies.

FRUITS UNDER GLASS.

By T. PATEMAN, Gardener to SIR CHARLES NALL-CAIN, Brocket Hall, Hertfordshire.

Early Pot Vines.—If Grapes are required very early in the season pot Vines are the most suitable, and if the latter are to be purchased they should be ordered at once from the nurseryman. Vines that have been grown in pots especially for this purpose and treated as advised in a previous calendar, have ripened their growths splendidly, the weather of late having been favourable. They are now in a suitable condition to have all lateral growths cut back to the main stem by the use of a sharp knife. After allowing each cut surface to dry, it should be treated with styptic applied with a fairly stiff brush, to work the preparation well into the pores of the wood. This precaution is necessary and will save many anxious moments immediately the sap begins to flow, especially if any doubt exists with regard to unripened wood. The house in which the young vines are to be grown should be cleansed thoroughly by washing the paint and glass with strong soft soapy water and the walls treated with lime and sulphur to destroy insect pests. Examine the pots for faulty drainage before finally placing them in position, for nothing checks healthy growth more than bad drainage. Remove all loose mulching material, also a little of the top soil, and add a top-dressing of rich compost. As a rule, the roots will be found quite near the top of the receptacles, and to prevent the new compost from being washed away when watering, means must be resorted to to prevent this. It may be done in two ways, either by placing pieces of rough turf around the rims of the pots to hold the finer compost, or by the use of a zinc band fixed securely in position by means of fairly strong wire. This work is best done before taking the vines inside. Even where bottom heat is available from heated pipes, there is nothing better than a bed of leaves and litter to give the necessary warmth and humidity in the atmosphere, which are essential to active growth in the early stages. The receptacles should be placed on two bricks, allowing sufficient space between them so that surplus water may pass away freely. This completed, the canes should be tied as nearly horizontally as possible to ensure the buds breaking evenly. Unless the nights prove cold and frosty, fire-heat will not be necessary for the first fortnight, and no harm will accrue if the temperature falls to 45°, but a little artificial warmth will be advisable if there is danger of the house being colder than this. Unless the weather is exceptionally mild, with sunshine, top ventilation will not be necessary, and when air is admitted it should only be for a short time, and the house closed early, spraying the vines with tepid rain water.

the edges of four-inch pots provide useful plants for this purpose next season, and also for draping the front of the stagings in the greenhouse. Where hardy subjects such as Retinospora and Cupressus are grown for winter use in tubs, these should now be placed in positions where they will be most effective, avoiding so far as possible, wind-swept, draughty corners.

Planting of Deciduous Trees and Shrubs.—The time has arrived when the planting of trees may be undertaken, especially those of the deciduous section, and the work should be continued so long as the weather remains mild and open. Any large specimens which were duly prepared by cutting a trench around them and severing any strong roots encountered in the process last winter, may now be lifted carefully and

Storing Early-flowering Chrysanthemum Roots—So soon as the early-flowering Chrysanthemums are over, a sufficient number of each variety should be dug up and placed in boxes or frames for the winter in order that plenty of cuttings may be available during the early part of March next. These roots are hardy enough to withstand our ordinary winters, but the young growths prove an irresistible attraction to slugs, and if left outside may be devoured in gardens where these pests are numerous.

Rotation of Crops.—Many of the crops in the kitchen garden are nearing the end of their season; before removing them it is a good plan to draw up a rough sketch of the positions occupied, and supplement this by an outline of the probable crops to follow them next season.

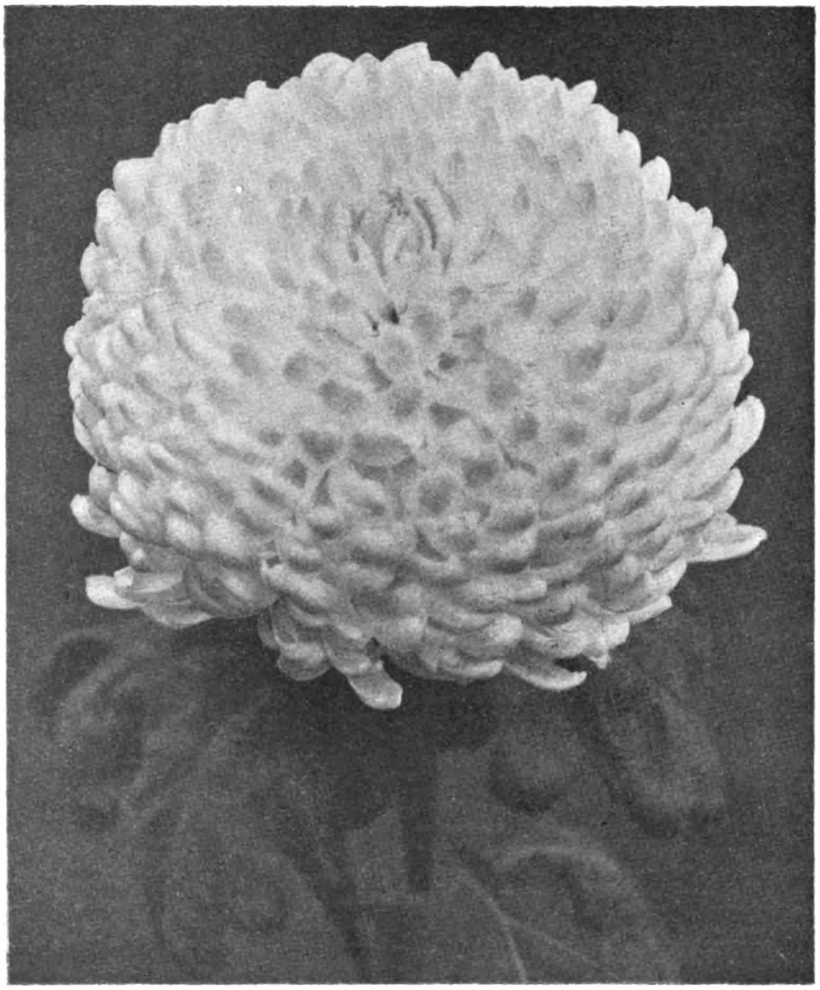

FIG. 155.—CHRYSANTHEMUM ALBA.

R.H.S. Award of Merit, October 19. Flowers pure white. Shown by Messrs. Keith Luxford and Co. (see p. 337).

PLANTS UNDER GLASS.

By John Coutts, Assistant Curator, Royal Botanic Gardens, Kew.

Amorphophallus Rivieri and Sauromatum guttatum.—Dry tubers of these plants may usually be purchased at this time. The plants are very useful as foliage subjects for associating with floral arrangements. The flowers are malodorous but they only last for a few days, whereas the handsome foliage remains in good condition for a long time. Large tubers will require six-inch or seven-inch pots; they may be started at any time early in the year in a temperature of 60°, and when they have made their growth they may be placed in an ordinary greenhouse.

Primula cortusoides (syn. Sieboldii).—There are many beautiful varieties of this Primula, which is deserving of more general cultivation, especially for the unheated greenhouse. Although the plants are easily raised from seeds they are best purchased in named varieties. They may be grown in five-inch pots or shallow pans, and after they have finished flowering they are best placed in cold frames; during the heat of summer they will do best in a frame with a north aspect.

Primula denticulata.—This Primula and its varieties are also very useful for the decoration of the alpine house or cool greenhouse. During the summer they should be planted out in rich, moist ground from which they should be lifted and placed in pots at the present time.

Funkias.—The variegated varieties of Funkia, such as F. lancifolia and F. ovata are useful decorative plants during the spring. Strong specimens should be potted during the autumn and plunged out-of-doors until they are required for gentle forcing. Funkia tardiflora, which flowers during the autumn, is worth growing in pots, as it is a very charming plant, and is especially useful for the small, unheated greenhouse. F. subcordata, with its large, pure white flowers, usually flowers during August and September and is also an ideal subject for the unheated greenhouse.

FOR NORTHERN GARDENERS.

By A. T. Harrison, Gardener to the Marquis of Ailsa, Culzean Castle, Maybole, Ayrshire.

Tubs and Vases.—All tubs and vases filled with summer-flowering plants, such as Fuchsias and Ivy-leaved Pelargoniums, should now be removed indoors, before the advent of severe frost, more especially in the case of those plants which have only completed their first season and which may reasonably be expected to give a fuller display next year. In the matter of edging plants for these tubs and vases, I would like to recommend the pretty Lotus peliorhynchus, with its soft, glaucous, drooping growths, and scarlet, beak-like flowers. The growths hang over, and in the course of a season almost hide the receptacle they are growing in, while the peculiar flowers always attract attention. A few cuttings inserted now around transferred to their new quarters, taking care to support them by effective means until they have become established again. Fruit trees and bushes should also be planted in good time, after the ground they are to occupy has been thoroughly prepared for their reception, as the probability is that they will remain on the same site for many years and should, in consequence, be given every opportunity to enable them to make a good start, and thus lay the foundation of both healthy and fruitful plants. The planting of evergreens is better left until the spring in our mild and humid climate, but where very dry weather is usually experienced during May and June, and the question of supplying newly-planted evergreens with water is impossible, they should preferably be moved during late autumn, before the soil temperature has been reduced by frost or snow.

This will be found extremely useful in the preparation and manuring of the ground, as in these days of scarcity of farmyard manure it is necessary to use what is available to the best advantage, and not dig in good manure when the succeeding crops would probably do better without it. As a general rule the soil in old gardens is rich in humus, and does not require the assistance of fresh manure for root crops, excellent results being obtained by the application of well-compounded fertilisers for most of this section. The members of the Brassica and Allium families, however, are gross feeders, and the plots to be occupied by them should be well manured to obtain the best results. These will not exhaust all the soil nutriment during one season, and the succeeding crop or crops will benefit largely by the residue which they have not appropriated.

BULB GARDEN.

AMARYLLIS BELLADONNA.

THIS fine, early autumn-flowering plant is a native of the Cape of Good Hope, whence, according to some authorities, it came to this country in 1712. But although so long known it is not half enough grown in gardens. Indeed, so far as my experience has gone a respectable group of this Lily is decidedly rare. Yet the plant is easy of culture ; and when seen in flower during September and early October is most attractive and precious. It is not precious from a monetary point of view, but rather for its floral value, most other choice flowers at that time being on the wane.

A peculiar feature of this Cape plant is its leaflessness during the stage of blooming. The flowers are of a pale rose colour and somewhat akin to those of the Madonna Lily in form and size. The planting of new bulbs should take place in autumn or spring, and a well-drained site is as essential, if not more so, than a good soil, for their well-doing. Except in the most genial localities the planting should be done at the foot of a wall or fence for the sake of the extra warmth which this bulbous subject appreciates. Once established, disturbance should be but rare.

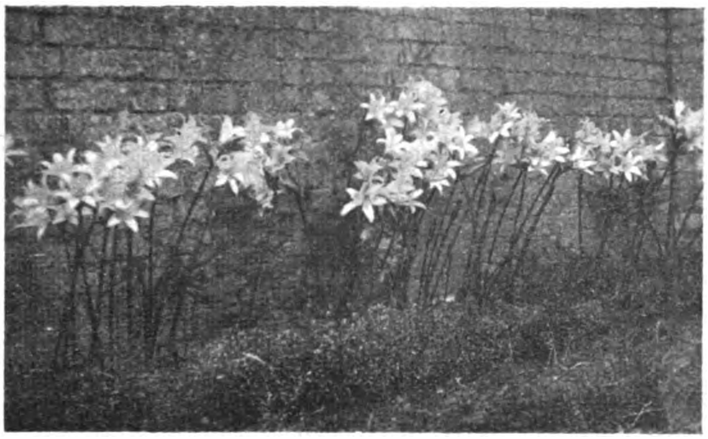

FIG. 156.—AMARYLLIS BELLADONNA AT WREST PARK.

The small photograph (Fig. 156) shows a colony of this Amaryllis growing in the gardens of Wrest Park, Bedfordshire, the seat of J. G. Murray, Esq. *C. Turner, Ampthill.*

ALPINE GARDEN.

SCHIZOCODON SOLDANELLOIDES.

THIS interesting and beautiful Japanese plant bloomed fairly well this season, its deeply-frilled, shell-pink bells on crimson stalks six inches long being inexpressibly lovely.

I have it grouped with Shortias and others of its kindred in a partially shaded spot where the well-drained soil is always cool and damp, yet never wet. The latter, in point of fact, is mainly composed of very old, black leaf-mould, a few stones being buried in the root-run.

I am inclined to think that, here at any rate, S. soldanelloides likes a little more sun than the Shortias enjoy. An occasional top-dressing of Pine-wood leaf-mould and sand is sprinkled over and around about all these plants. The secret of success in growing Schizocodons, Shortias and their allies is in planting a good-sized clump, and the same thing, in my experience, applies to Epigaea repens. None of these plants is exactly easy, but all are well worth any amount of patience and trouble. *J. N. Wales.*

SAXIFRAGA AQUATICA.

I WAS glad to see the little note on Saxifraga aquatica (p. 286). I collected this plant a good many years ago in the Pyrenees, growing in a very swampy, rocky place below a small lake. At the same time and in the same place I collected a special form of the miniature London Pride, Saxifraga primuloides, which has since taken firm hold in English gardens as Saxifraga primuloides, Elliott's variety. Saxifraga aquatica, on the contrary, although a very handsome plant, has never taken the same place in gardens and probably never will as it is not always easy to cultivate. Sometimes I have grown it successfully here and flowered it well, and sometimes it has dwindled, and I have almost lost it, and once or twice I havo actually and entirely lost it, and have had to beg a fresh supply from gardens to which I had given it.

The finest and healthiest plants I ever saw were planted almost at the waters' edge in a ditch running through a bog garden. I think the plant dislikes stagnant water, and should always, if possible, be given running water if it is given a water-side position at all. Failing such a position, I think the best place for it is in a deep bed of soil, rich in humus, such a soil as retains moisture by the amount of humus it contains, but which is, at the same time, well-drained. *Clarence Elliott.*

WAHLENBERGIA SERPYLLIFOLIA MAJOR.

THIS beautiful little plant is perhaps happiest when accommodated in the scree or moraine, although it succeeds quite well when growing in a well-drained soil, and provided with a surfacing of chippings and a sunny ledge in the rock garden. It is, furthermore, advisable to afford protection from winter damp, a sheet of glass meeting the requirements.

The plant has a trailing habit and mat-like growth, producing very tiny leaves, but for such a liliputian, the flowers are very large, great bells of Tyrian-purple standing with mouths open to the sky. The species is very fine when grown in a pan in the alpine house, the colouring of the flowers being rich and most effective ; propagation is easy by cuttings inserted during the summer.

The plant is often referred to Edraianthus. *Ralph E. Arnold.*

MODIOLA GERANIOIDES.

THIS little plant is seldom listed in catalogues either under the above name or that of Modiolastrum geranioides, by which it is also known, probably because it is not sufficiently hardy to withstand the winters of any but the warmer districts of the British Isles. It grows only some five or six inches high and has finely-divided leaves and bright cherry-red blooms in late autumn I grew it on a dry sunny rockery facing almost due south, and here it survived for a few years but eventually disappeared after a severe winter. *S. Arnott.*

FLOWER GARDEN.

AUTUMN DELPHINIUMS.

IT is possible to have an exceedingly bright bed or border of the ever popular Delphinium in bloom from July till early October by a careful utilisation of seedlings. We have been very successful this season, even though the site chosen proved to be very dry by reason of the warm and rainless September.

The seeds were sown in heat in February, and so soon as the seedlings could be handled they were pricked out into large boxes. These receptacles were about four inches deep. Two inches of old manure was placed in the bottom of the box and a mixture of loam, leaf mould, and sand used to complete the filling.

The seedlings were placed two inches apart and kept in heat for a few weeks ; afterwards they were gradually hardened and the boxes were placed in the open by early May. Planting in the prepared border was done in mid-May, in rows fifteen inches apart, the plants being put nine inches apart in the rows.

Early staking is important, and when mildew develops, as it is bound to do on many plants, dusting with sulphur will check it. The best possible strain of seed is all-important, and then the expectation of really good hybrids is bound to be realised. Our plants, this autumn, have given us splendid colours, and quite a number produced good spikes of cream flowers. The clumps from now onward are useful for planting in masses anywhere, and the best will be planted in the permanent herbaceous border. *Geo. W. Stacey, Chorley Wood Cedars.*

PARADISEAS.

FOR just what reason the botanists retained Anthericum Liliago and placed the species Liliastrum under the separate family title of Paradisea I cannot say, but it is quite common still for the plants which are, for correctness sake, named Paradisea Liliastrum, P. L. major and P. L. gigantea, to be catalogued as Anthericum Liliastrum and its varieties. If the separation could but ensure that the plants would really be kept distinct by the growers for sale it would be of concrete benefit, for it is tantalizing to seek Paradisea Liliastrum giganteum and to obtain for it Anthericum Liliago major.

P. Liliastrum giganteum is a big, strong-growing plant with broad, strap-shaped leaves and stout, upstanding flower spikes fully four feet high.

The flowers are proportionately large, glistening white, and of such substance that they last a long time, either upon the plant or when cut. A further strong point in favour of the true plant is its sweet fragrance, and when a colony of some half-dozen plants has been established a few years its mass of bloom will scent the air for a considerable distance. The soil for such a colony should be trenched deeply and well enriched with manure. The plants are also benefited by frequent soakings with liquid manure. *M.*

FLORISTS' FLOWERS.

NEW CARNATIONS.

THE following new Carnations have been registered with the British Carnation Society :

Kathleen.—A seedling perpetual-Malmaison variety with mauve-rosy flowers five inches in diameter. The plant is of sturdy growth. Registered by Messrs. S. Low and Co., Bush Hill Park.

Mauve Dawn (*May Day × Mrs. C. H. Cutbush*).—A rosy-mauve flower three inches in diameter with slight Clove fragrance. The stem is strong and erect ; the calyx of pefect form. Registered by Mr. H. J. Heath, Hallgrove Gardens, Bagshot.

HARDY FLOWER BORDER.

SIDA NAPAEA.

Now that Malvaceous subjects have acquired a well-deserved popularity, there should certainly be a demand for this very striking plant which, although called "Indian Mallow" is a native of Northern America. In fairly deep soil, Sida Napaea grows to a height of six feet, and produces huge umbels of glistening white flowers.

The foliage of the plant is handsomely cut in palmate form, and a good specimen standing boldly out against a background of tall, dark evergreens presents a very imposing appearance.

It is a plant which will prove very serviceable in the broad spaces of public parks, where it will maintain a great display of bloom from early July to late September. In the free and informal parts of large gardens where walks lead toward woodland or water gardens, Sida Napaea is capable of giving lightness and relief to otherwise dull and monotonous corners, and finally, it should serve a useful purpose when breeders of other Malvaceous flowers seek something strong and powerful for crossing purposes. Seeds afford ready means of raising stock.

SALVIA VIRGATA NEMOROSA.

The Salvia tribe is very remarkable for plants of uncommon features, and in several cases the chief attraction is intensely brilliant colour. The subject of this note is not remarkable for dazzling flowers, indeed these are a soft restful colour to look upon, and yet capable of creating surprises. One day these will be as blue as any Veronica, and another day appear to have been transformed to a rich, vinous purple. One may stand at a distance and note the uncommon shade of colour, and as one watches a gentle breeze will set the spikes swaying and as they sway the colour seems to change. All this is due to the fact that the labiate corollas are blue, but the bracts which play an important part in the display of this, and most other members of the family, are of a rich purple tint, and as these remain long after the corollas have fallen we get these changing effects which give the plant unique charm.

It is a plant of sturdy growth, making a bush fully a yard high, but requiring no staking. Although one plant will yield a large number of spikes and will remain in flower for three months this Salvia is infinitely more pleasing when grown in a colony of anything from six to a dozen plants. It seems to me to thrive anywhere and in any soil, but it is certainly a plant capable of withstanding a greater amount of drought than very many of our herbaceous perennials. I prefer to propagate cuttings made of young growths in spring which I find root readily enough under a bell-glass or hand-light, and I have had spring-struck cuttings in bloom from July till October.

Occasionally I have seen Salvia pratensis labelled as S. v. nemorosa, but whilst I have nothing to say to the detriment of this delightful native plant, it is not, and should not, be confused with Salvia virgata nemorosa. *A. J. Macself.*

ANEMONE JAPONICA.

This flower ranks amongst the most gorgeous of hardy garden perennials and is especially useful for the decoration of the garden in late summer and autumn. Few plants are so desirable or so well adapted for naturalising in open woodland glades, the front of shrubbery borders, or semi-shaded positions. They are also of inestimable value as cut flowers for decorative purposes. The plants grow well in a deep, fairly moist soil.

The most distinct varieties for effect or for cutting are: Louise Uhink, a new introduction with large, saucer-shaped, snow-white, semi-double flowers, growing three feet tall; Lady Ardilaun, still one of the best, producing large, semi-double, pure white flowers on tall, stately, well-branched stems fully three feet tall; Snow Queen, a distinct and very conspicuous variety on account of its semi-double flowers with numerous petals of snowy-whiteness; Queen Charlotte, Alice and Lovely, three good, rose-pink varieties; and Kreimhilde, Mont Rose and Prince Henry, the most desirable of the dark crimson sorts. *W. L.*

ROHDEA JAPONICA.

Although it is somewhat doubtful whether British gardeners would give a second glance to Rohdea (or Rhodea) japonica, there is no doubt whatever that in Japan this Liliaceous plant is not only widely cultivated, but a subject of the keenest interest to a very large number of specialists.

Rohdea japonica is a native of the south-west part of Japan and has been cultivated in that island kingdom for at least two centuries as a pot plant for home and verandah decoration. The varietal forms raised in Japan are almost numberless, and they are grouped into four sections, *i.e.*, the large-leaved, semi-tall, dwarf and Liliput. Those which belong to the three first sections may flower and fruit in due course, but it is stated that the Liliput varieties can be increased only by division. In the varietal forms so greatly loved by the Japanese specialists there are those with striped, variegated, spotted, margined and crested leaves. In some instances the leaves recurve, and in others they incurve, rolling up very curiously, while yet again others have crested foliage. Certain varieties have leaves of satin-like texture, while in others the leaves are thick and leathery, and in still others they are ribbed like a coarse textile fabric. Some idea of the enthusiasm entertained in Japan for Rohdeas may be gathered when it is stated that so much as 5,000 yen, equal to £500, has been, in recent times, paid for one plant of a distinct new variety.

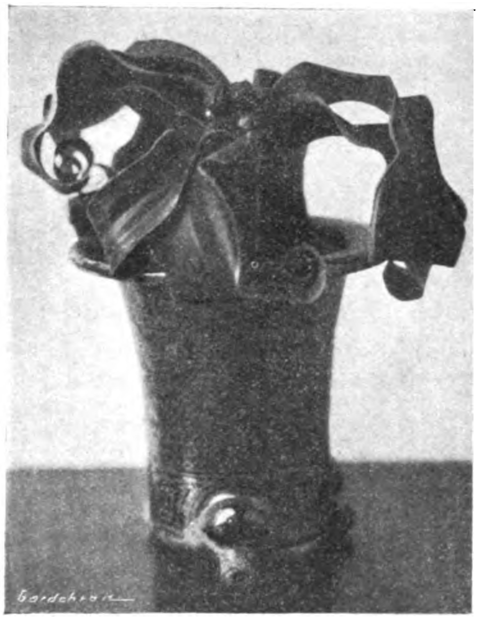

FIG. 157.—ROHDEA JAPONICA VAR. TAMAJISHI.

By the kindness of Mr. Amos Perry we have received some notes from one of his Japanese correspondents who points out that R. japonica is perfectly hardy and may be cultivated out-of-doors all the year round at Tokyo, but particularly good varieties need to be protected during the winter and placed in an airy, semi-shady position through their growing period in the hot season. They are extensively cultivated in ornamental pots, potted in a mixture of peaty soil and small granitic stones, for although water may be needed several times a day during the season of greatest growth, it is necessary that the water should pass away freely from the roots. Some of those who specialise in the cultivation of Rohdeas occasionally add a little nitrogenous or phosphatic fertiliser to the water, but it would appear to be quite an easy matter to kill or spoil plants by an over-dose of these chemical stimulants.

Increase of the finer varieties is by division in the spring, but large numbers of plants are raised from seeds sown in spring, the seedlings appearing early in summer and are transplanted in autumn or the following spring, by which time each seedling will have two or three leaves. Seedlings are usually more robust than plants raised by division and they usually flower when six or seven years old, subsequently producing coral-red berries, which, together with the grace of the foliage, make the plants effective for home decoration.

Each year an exhibition of Rohdeas is held at Tokyo, when new and rare varieties are exhibited, and at one of these recent exhibitions the variety named Kinjionomatsu was sold to an enthusiastic collector for 7,500 yen, a price which compares very favourably with the amounts obtained for choice hybrid Orchids. Many amateurs, and probably so many as eighty nurserymen, exhibit plants at these shows, and it is only a very ordinary variety that may be purchased for 100 yen. Some of the leading specialists in Rohdeas are Mr. Matsutani, director of the Tokyo Rice Exchange, Mr. Sumikura, Dr. Sohaku, Mr. Takahashi, Mr. Arai, Mr. Suzuki and Mr. Awada, all of Tokyo; Mr. Fujita of Sagaken and Mr. Sakakibara of Aichiken.

In 1919, Mr. Matsutani sold a variety named Chiyodanomatsu for 10,000 yen, and in 1925 individual side-shoots of this variety were purchased by Dr. Sohaku for 1,800 yen each.

Mr. Matsutani is one of the keenest amateur growers of Rohdeas, and although he has occasionally obtained very large sums for new and distinct varieties, he considers that he spends at least half the sum thus obtained on the entertainment of friends who come to congratulate him upon his success!

A few of the—to the Japanese—beautiful standard varieties are as follow: Tamajishi, which means "Jewely Lion" (Fig. 157), has dark green, silver-edged, recurving leaves; this originated about fifty years ago. Negishimatsu has green leaves marked with white and with a broad, dark green margin; it is one of the oldest of the choicer varieties. Chiyodanomatsu originated with Mr. Matsutani, who is the author of *Omoto Taikan* (The Book of Rohdea japonica). This is very like the one previously mentioned, but has crested leaves. Nimen Koriu has green or striped, narrow leaves and a double-lined crest. Shima Koriu is striped with green and white and finely crested. This and the one previously mentioned have been the parents of many choice varieties. Sekainozu is a spotted variety, although it is said that seedlings from it rarely produce spotted or variegated foliage. Miyakonojio is one of the tall sorts, with straight, white-margined leaves. Zuiho has deep green leaves, narrowly and regularly striped, and with broad white margins. Jitsugetsusei has rolled foliage, with a broad pure white margin on a clear green ground. Kinkirin is a sport from Shima Koriu, and its green leaves are striped and margined with white, and elegantly crested. Homeiden is another crested variety with white-striped leaves, the under parts of the leaves being variegated in much the same way as Eulalia japonica zebrina. Gekiuden is one of the finest of the margined varieties and it has white, flattish cresting. Gunjaku is one of the dwarf, small-leaved sorts and interesting because each leaf has a small, heart-shaped end which suggests that minute birds have settled upon the plant.

We would add that through the kindness of Mr. Amos Perry we have also had the pleasure of inspecting a copy of the Japanese book on Rohdea japonica, in which about one hundred varieties are represented in colour, and all of them shown growing in ornamental pots.

ROSE GARDEN.

ROSE GRUSS AN TEPLITZ.

This Rose is so well-known that it is apt to be overlooked in favour of newer varieties. As a climber and perpetual bloomer it would be hard to excel and seems proof against insects and mildew alike. Several plants trained on a pergola here have been blooming continuously since June and will continue to flower into November. Its bright crimson colour is conspicuous from a distance and gives a cheerful effect right through the season.

It does exceedingly well as a standard, forming a large, spreading head covered with blossoms. I planted a standard of this Rose in a cottage garden in Bedfordshire in 1909 and it has made a glorious show each season since and still looks vigorous. *R. Gardner, **Heywood Gardens**, Cobham.*

PLANTING.

If it is proposed to make new Rose beds or replant old ones this autumn, the work of preparing the soil should be proceeded with so that everything is in readiness for early planting. A rich loam is perhaps the best medium for Roses, but they may be grown successfully in most soils, provided the beds are properly prepared and generously treated.

Where the soil is light and sandy a liberal quantity of heavy loam should be added, if this can be obtained. The addition of clay (which is sometimes recommended) is of little use unless it is well pulverised by being exposed to the weather and frosts, for pure clay applied in lumps will not incorporate with the soil, and may be dug up years after in the same condition as when applied.

If the natural soil is a strong clay-loam it may be advisable to add coarse sand or gravel to make it more open and assist the drainage, but this can only be judged on the spot.

Lime will improve the texture of all soils except those which are strongly calcareous.

Roses are deep-rooting plants and a thorough trenching of the soil is therefore especially necessary. A reasonable quantity of decayed farmyard manure should be worked in the ground, finishing with a sprinkling of bone-meal on the surface. Dwarf Roses are frequently planted too thinly, making the beds appear scanty; a distance of twelve to fifteen inches apart is suitable for the medium growers, if they are required to furnish the beds and remove the temptation to interplant with carpeting plants.

Certain varieties of Roses are more suited to some districts than are others, but apart from hardiness, the suitability or otherwise of a variety is usually governed by its susceptibility to fungous diseases which may be prevalent in the district. In making a selection of varieties it is advisable to take this into consideration.

Where black spot (Actinonema rosea) is troublesome it will generally be found that the varieties of the Pernetiana group are the first to succumb, especially those having the glossy green foliage typical of their Austrian Briar origin. The Teas and Hybrid Teas are more resistant to this disease, and when it is persistent it will be wise to give preference to those varieties which have that bronzy red colour in their young growths, which denotes close affinity to their Tea Rose ancestors. In the case of mildew the positions are reversed, for whilst Teas and Hybrid Teas are very prone to attacks of this disease, the Pernetianas are practically immune. Amongst rambler Roses the climbing Polyanthas frequently suffer from mildew in the colder parts of the country, whereas the Wichurianas usually keep quite free of the disease, but in the mild and humid districts the exact opposite generally happens. Hybrid Perpetuals are the greatest sufferers from Rose Rust, or Orange Fungus, and badly affected plants are better destroyed; after the beds have been deeply trenched, they may be planted with Teas or Pernetianas, which are not so liable to contract this disease. *F. C. Puddle.*

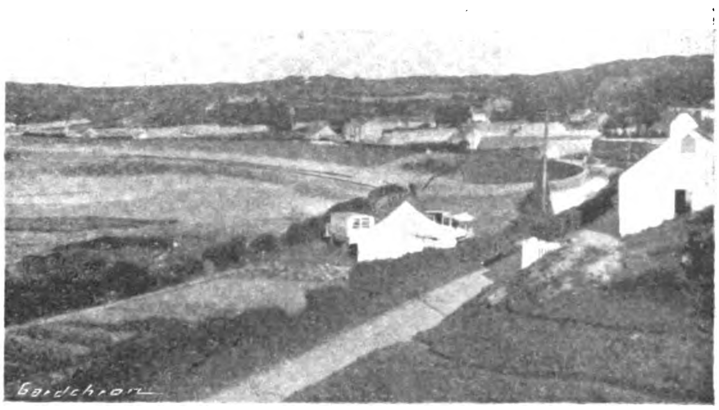

FIG. 158.—ROQUAINE BAY, GUERNSEY, SHOWING GLASS HOUSES.

HORTICULTURE IN THE ISLAND OF GUERNSEY.

No. 1.

Quite apart from its attraction for visitors in virtue of its natural beauty, wonderful rocks and excellent bathing, the little island of Guernsey—the Grenazay, or "Green Isle" of the Normans—is of exceptional interest to the gardener because of its huge production of fruits, flowers and vegetables, as well as rare plants and shrubs. During a visit in August the writer was greatly impressed by the extent and importance of the horticulture of the island, and has ventured a few observations thereon.

It may be useful at the outset to give some particulars of the island itself. It is somewhat triangular in shape, steeply cliffed and rugged on the south and a few other points, and rather flatter to the north-west and north-east. The whole island covers less than 16,000 acres, and the rough coast country, steep hillsides and some sandy wastes reduce the cultivated area (arable and grass) to 11,000 acres. The climate is mild throughout the year, and frost and snow are rarely seen, so that many plants (*e.g.*, Pelargoniums) which would perish in an English winter, there survive in the open all the year round.

At a few points in the island the altitude runs to well over 300 feet above sea-level, indicating somewhat barren and wind-swept heights. The low-lying fields, however, are commonly snug and sheltered, usually very small, and protected by very high hedges or earth banks. The holdings are quite small, and there are perhaps, 2,000 holders in all.

The island population is about 40,000, and "passenger arrivals" number 50,000 to 60,000.

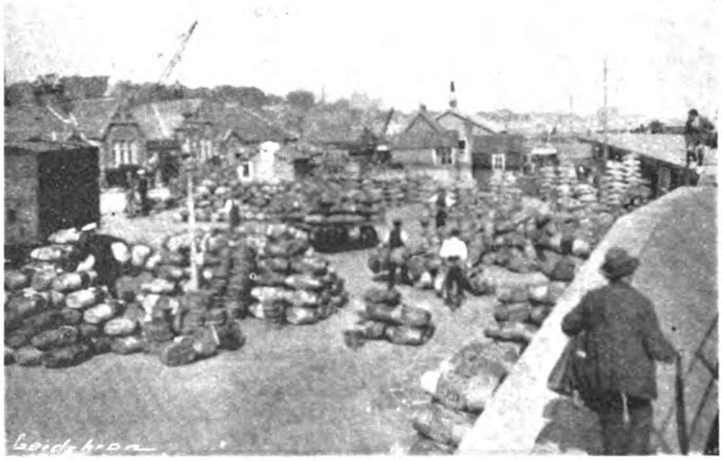

FIG. 159.—GUERNSEY: RETURNED EMPTIES.

Exports.

The glasshouse industry is extensive, there being about 600 acres under glass, which is stated to equal 150 miles run of houses (Fig. 158). Further, it is believed that the glasshouses are increasing at the rate of 200 or more per annum, and it is of interest to observe that in 1924 the imports of greenhouse glass reached 1,971 tons, or more than double those in the previous year. In the same year the imports of many building materials, timber and wood for box-making, increased considerably.

Regarding exports generally (not including

Alderney) the following selected figures are of interest :—

	1924 Tons	1923 Tons	1914 Tons
Flowers	2,059	1,619	2,326
Bulbs	195	264	277
Plants and Shrubs	35	51	89
Tomatos	21,049	19,241	15,778
Potatos	2,405	2,794	1,503
Vegetables ...	1,792	2,230	1,654
Grapes	1,599	1,675	2,056
Melons	105	118	26
Fruit (various) ...	134	115	381

Complete figures for 1925 are not yet to hand, but the estimated value of certain produce exported in the year ending October 1, 1925, was as follows :—

	Value. £
Tomatos, 3½ million 12-lb packages	843,087
Flowers, 560,000 boxes	211,333
Grapes and other fruit, 259,000 baskets	63,276
Vegetables, 238,000 packages ...	55,122
Bulbs and Plants	25,000
	£1,197,818

Packing and Grading.

Packing is done according to the produce concerned ; flowers in boxes ; Tomatos in handled wicker baskets and to some extent in non-returnables (perhaps 14 to 28 per cent.) ; fruit in boxes and trays and strong-handled chips with stout covers. Large quantities of packages are shipped in strong containers. The methods of packing have been the cause of some discussion with the railway companies concerned, and it has been stated that non-returnables are much less used than they ought to be because the companies would not pay more than fifty per cent. on claims for total loss and nothing for damage. Yet they are likely to increase because buyers are insisting on getting them, but in view of the difference in make it is felt that makers' names should be stamped upon them. A considerable retail direct-to-consumer trade with England is done in the case of Grapes, strong chips with covers being used.

Mr. R. H. J. Sarre advocates careful and fair packing, and adds that the all-on-top-nothing-under style does not pay, and that in a slump time the consistently fair packer will get 1d. or 1½d. per lb. more than the ordinary slap-dash merchant. Mr. G. Martineau is a strong believer in grading on sound lines—with the main object of making the grade which contains the bulk as good and uniform as the material will allow ; he considers that " grading is worth practising with all classes of produce where the good grade is the bulk," and that " the throwing out of, say, two baskets of lower grade in every ten should make the remaining eight decidedly good."

The return of the empty wicker baskets at the quay (Fig. 159) is one of the sights of the Port, as they arrive in thousands. In this connection it may be noted that the regulations made by the States Supervisor for the shipment of produce include one which lays it down that the labels used for packages shall be coloured as follows :—Welsh towns, blue ; Scotch towns, yellow ; Manchester, red ; Birmingham, green ; any other English town, white. This readily facilitates sorting by the railway companies, and as block letters must be used on the labels the business of transit is further assisted.

The Guernsey Growers' Association appears to be a very live body, having for its object the assistance in every possible way of the interests of its members. It keeps a register of those requiring employment in any Department of the growing industry, and holds meetings and gives lectures for the dissemination of knowledge in relative subjects.

The Royal Guernsey Agricultural and Horticultural Society was formed " for mutual help and guidance and for the public good." One of its objects is to further the interests of horticulture and " to promote the highest standard of horticultural production." It has a membership of over a thousand. District shows are held regularly, and judging by the northern branch show which the writer attended at the end of August, they attract many exhibits of high quality and must be doing valuable educational work. The exhibits of fruit, vegetables and flowers were, especially in view of an exceptionally dry season, very good indeed, while a children's competition for model houses and gardens was most attractive.

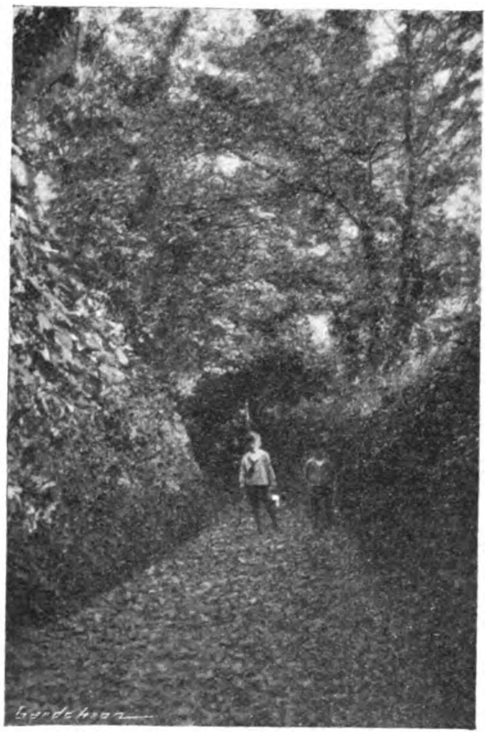

FIG. 160.—A GUERNSEY WATER LANE.

Water Supply.

As a general impression, I felt many times that the gardens surrounding the glasshouses were very untidy and weedy. It seems, however, that in many of these cases it was due to the fact that the areas around the houses are occupied by bulbs, and at a busy season therefore are allowed to take their chance, and get cleaned at the end of August when labour for outside work of this kind can be spared. The point is that the glass pays best and labour is costly. The glasshouses occupy large areas in the lower-lying parts to the west and north-west, and at many sheltered spots through the centre of the island, finding congenial spots in the valleys, often deep in hollows, and on the choicer lands.

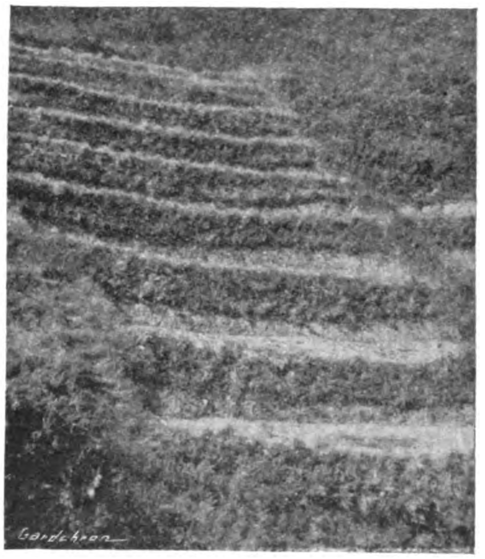

FIG. 161.—GUERNSEY TERRACE GARDENS.

Supplies of water are available in many cases from the States' water works, but the number of windmill pumps is remarkable, these often standing very near together. Indeed, at one spot at Vazon no fewer than eighteen were counted without moving. The water pumped is stored in large tanks, fifteen feet to twenty feet above the ground level. In some cases, near the " water lanes " (Fig. 160), where much water passes down the slope of the lanes towards sea-level, dams are erected to stop the water, and hydraulic rams are used to force the water considerable distances to storage tanks ; much water may be lost, but the rams are run at such negligible cost that they readily repay the capital expenditure, which is round about £5. The water is used on the hill slopes and for terrace gardens for irrigating bulbs.

Terrace Gardens.

On many steep slopes on the south of the island terraces have been gradually laid out for growing Potatos for home use, Tomatos, bulbs, etc. In some cases (Fig. 161), these terraces run one above another and are very striking. Potatos may be planted at the end of December for late spring use, and then be followed by outdoor Tomatos. In other cases bulbs are grown with much success.

It is of interest to note that many years ago Guernsey had a considerable trade in cider, and there are still several old cider presses to be seen. One of these, in Saint's Bay, dates back to the early eighteenth century, is in wonderful preservation, and is the subject of a small charge for inspection. It is stated that it takes fourteen bushels of Apples to make a barrel of cider, and that for every barrel a bushel of Apples must be paid as a tithe, though this tithe seems to be dying a natural death because Apples are not grown to any extent. *H. C. Long.*

(To be concluded.)

TREES AND SHRUBS.

FORSYTHIA OVATA.

The plants I have seen of this attractive species were of moderate and somewhat erect growth, and although perhaps the yellow colouring of the flowers is not quite so bright as in some other species, this shrub is singularly attractive ; if it should maintain a comparatively lowly stature, some delightful effects may be enjoyed by using it in conjunction with a variety of vernal flowers, say, for instance, Primula denticulata. This Chinese Forsythia appears to flower freely, and should be a valuable adjunct to the spring garden. *Ralph E. Arnold.*

ENKIANTHUS.

Few hardy shrubs assume a more brilliant autumnal leaf-colouring than certain members of the genus Enkianthus. Yet they are not extensively planted for decorative effect in gardens. They are usually smothered with bloom in May and June. With some of the species the colour of the flowers and the young, expanding foliage nearly approximates, so that at some little distance the innumerable flowers do not show to great advantage.

Enkianthus campanulatus, the most generally cultivated species, forms a bush five feet high. The young shoots and the bell-shaped flowers have a reddish tinge. In the variety Palibinii the smaller flowers are of a rich shade of red. E. cernuus rubens, is another red-flowered variety, but, as I know it, a somewhat weak grower. E. pallidiflorus is one of the best of the white or cream-coloured sorts. The earlier, white-flowering E. japonicus is not so showy, but its foliage is at this season the most brilliantly tinted of all.

The robust-growing, free-flowering E. tectus, E. recurvus, E. pendulus, E. ferrugineus and E. sino-himalaicus resemble each other in general appearance. In common with other members of the Ericaceae, these plants prefer a moist, acid, lime-free soil, and in order that the growths may ripen thoroughly they should be planted in a sunny position. *J*,

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CLASSICAL AND LEGENDARY GARDENS

XI.—SOME MINOR EXAMPLES.

THE list of legendary gardens is not yet by any means complete. It is granted that some of the allusions are obscure, but that is only another way of confessing that perhaps our classical knowledge is not, on the whole, as extensive to-day as it was in an earlier generation. Who, for example, could tell off-hand what Milton meant in the following lines, which were written to show how greatly Eden surpassed all the other gardens of high renown?

"Not that fair field
Of Enna, where Proserpina gathering flow'rs
Herself a fairer flow'r by gloomy Dis
Was gathered, which cost Ceres all that pain
To seek her through the world: nor that sweet grove
Of Daphne by Orontes, and th' inspir'd
Castalian spring, might with this Paradise
Of Eden strive: nor that Nyseian isle
Girt with the river Triton, where old Cham
Whom Gentiles Ammon call and Libyan Jove,
Hid Amalthea and her florid son."

To the classical scholar these groves and gardens were places of repute. They had won for themselves a high position in ancient lore on account of their wondrous beauty and surpassing charm, and were prized not alone because of the attractions which were theirs by nature, but because of what art had done to develop natural beauty. They were linked with the Garden of the Hesperides, and, if not so far-famed, were rivals for honour.

Daphne, for example, was a Syrian beauty spot, forming a kind of garden city, park, and pleasure resort in one, on the banks of the Orontes, five miles to the south of Antioch. Thus it was a compeer of the famous gardens of Damascus, and possessed a grove of Cypresses and Laurels with a temple to Apollo, causing it to be a favourite resort of the people of Antioch. So the Grove of Daphne became proverbial for its beauty.

Enna and Proserpina, again, were much in evidence in the days of Spenser, Milton and other poets of a past age.

The garden of Proserpina this hight,
And in the midst thereof a silver seat
With a thick arbour goodly overdight,

is the way the Faerie Queen speaks of it. Enna or Henna was said to be the centre or *omphalos* of the island of Sicily, surrounded by fertile plains, and a chief seat of the worship of Demeter. Pluto, says tradition, carried off Proserpina from a flowery mead while she was plucking the blossoms which flourished there. Ceres is but another name for Demeter, who was the protectress of flowers and fruits, horticulture and agriculture. There is much in the mythologists as well as in the historians and poets about Demeter or Ceres, Persephone or Proserpina, which is of interest, but of these I may not write further. Some would make the Nyseian Isle, as Milton does, a place apart: and state that it was from a plain by that name in Asia, and not in Sicily that the abduction took place.

And what of the Gardens of Hercules? We have met with Hercules in connection with the golden Apples of the Hesperides. It was one of the tasks which he had to perform to obtain the Apples which Hera had received from Ge (the earth) at her wedding and entrusted to the dragon Ladon. But the term Gardens of Hercules was applied to those places which in spite of adverse conditions became, by virtue of care and attention, rich in forms of plant life. They were the deserts which blossomed as the Rose. De Gubernatis has reminded us that the gardens of the Greeks and Romans were under the special protection of Hercules, and supposes that this may be because of the exceptional rôle which he plays in the legend of the famous Garden of the Hesperides which lay in the region of the setting sun. His place is taken in Sicily by Saint Paulin de Nola, in whose honour the gardeners celebrate their festival in the month of June. He adds (*Myth. des Plantes*, i. 184) some interesting notes on the folklore of gardeners for which there is not space in this article.

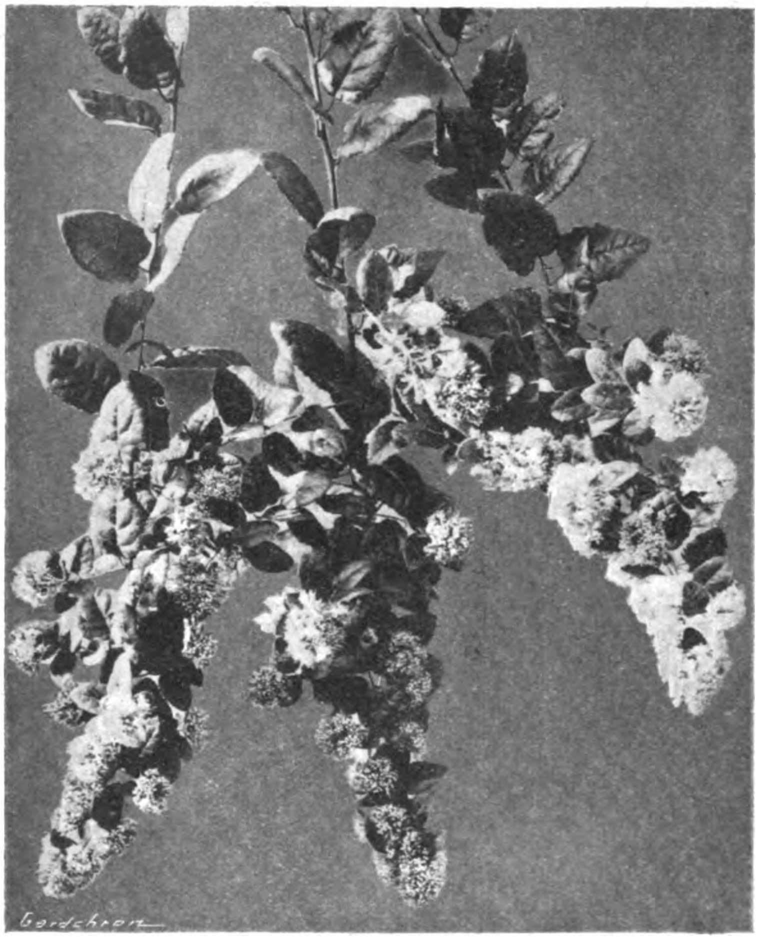

FIG. 162.—PROUSTIA PYRIFOLIA.
(see p. 352.)

There is a curious allusion to gardens in the book of *Isaiah* (ch. LXVI, 17) which would be worth careful study by those who wish to see how large a place was filled by the pleasure ground among ancient peoples. Is it possible that these were the Gardens of Shedad? Those who would learn who Shedad was may turn to D'Herbelot's valuable but now little known *Bibliotheque Orientale ou Dictionnaire Universel* or to an annotated edition of *Vathek*.

Egyptian and Babylonian scholars find the counterpart of the legendary garden of Eden in the Sacred Grove of Anu, which was guarded by a sword turning to the four points of the compass, and other similar gardens. The Akkadians told how the sun visited night by night an enchanted garden in the west, a legend which has many variants in the mythology of eastern lands. In this respect, as Conder has pointed out (*Syrian Stone Lore*, p. 150). "Hercules is closely akin to Izdubar, and, like him, slays the lion and the wild bull, voyages over the sea, visits an enchanted garden in the west, and goes to Hades." Osiris, again, is the Egyptian counterpart of these legendary heroes and gods, and he, too, has his garden or place of eventide resort.

"A garden usually makes a part of every Paradise (writes Miss Kent in her *Flora Domestica*, XXVIII), even of Mahomet's. In Milton's Paradise the occupation of Adam and Eve was to tend the flowers, to prune the luxuriant branches and support the Roses, heavy with beauty. Poets have taken pleasure in painting gardens in all the brilliancy of imagination. See the Garden of Alcinous in Homer's Odyssey; those of the Morgana, Alcina and Armida in the Italian poets; the gardens fair

"Of Hesperus and his daughters three
Who sing about the golden tree,

and Proserpina's garden, and the Bower of Bliss in Spenser's Fairie Queene. The very mention of their names seems to embower one in leaves and blossoms."

The gods of the early Hindûs were fond of the garden. Indra had his pleasure ground or Paradiso which was named Nandana. Prof. de Gubernatis eloquently writes in reference to this:—*Le ciel ayant été conçu parfois comme un bois où les dieux jouissent des voluptés qui leur sont réservées (d'où le nom de nandana-réjouissant-donné au jardin de plaisance d'Indra), ce bois, ce jardin, avec ses sources et ses ruisseaux, avec ses fleurs lumineuses et ses fruits immortels, avec ses oiseaux dont le chant charme les dieux, a constitué essentiellement ce qu'on nomme le Paradis.—Myth. des Plantes*, 1, 261.

Varuna, another famous Hindu deity, also had a garden of pleasure named Ritumat, while popular legends say much of enchanted gardens guarded by a dragon. Place must also be found here for the garden of Bakavali which in many ways recalls Sukhâvatî. The soil of the garden of Bakavali was of gold. The walls which enclosed it, as legend tells us, were composed of rubies, together with Yemen cornelians, and Rose water in rivulets of turquoise-blue coursed gracefully through emerald parterres. The flowers were of dazzling brilliance and the fruits of the trees resembled star-clusters in their beauty. The emerald branches drooped gracefully as the evening breeze swayed them over the lakes filled with attar of Roses, and on all hands whatever was voluptuous and sensuous met the gaze.

Here, however, this notice of the legendary and semi-legendary gardens of the poets and mythologists must close. We learn how passionate the delight of men has ever been in regard to the garden, and what pride through all ages and in every land has been taken in flowers and the fruits of the earth. Future studies must be devoted to subjects of a more practical and historical nature, though they may not on that account be more pleasing or attractive. Legend and folklore disclose an aspect of the mind which is ever worthy of study since the ideal is the best handmaid of the practical. *Hilderic Friend.*

NOTES FROM WISLEY.

Any doubts which may assail the intending visitor to Wisley as to whether there will be any flowers worth seeing in mid-October are set at rest so soon as he arrives at the memorial entrance gates, for on the right will be found a cheering display of Amaryllis Belladonna. This plant flourishes also in the rock garden where some of the long established bulbs have each borne so many as nine flower-scapes. In the herbaceous borders many good varieties of Helenium and Helianthus continue to bloom, while late-flowering varieties of Aster Amellus such as Framfieldii, Viola and the pink-flowered Miss A. E. Groll are making a bright show of colour

Quite a number of shrubs are blooming in modest fashion in the field garden and include Hypericum lysimachioides and the dwarfer and more graceful Hypericum uralum. Buddleias, such as B. Davidii, B. Forrestii—whose flowers are still very fragrant—and a Buddleia with flannely foliage, discovered by Captain Kingdon Ward, are also to be seen in flower, together with Erica vagans rosea and Daboecia polifolia. The chief attractions, however, in the field garden are the berried shrubs, such as Berberis and Cotoneaster. Among the latter is a black-fruited variety of C. horizontalis, discovered by the late Mr. Reginald Farrer. Its leaves are now turning red. Another noteworthy member of this family is C. lactea, which bears myriads of red-brown berries that usually persist right through the winter. The Berberis hybrids have not fruited quite so abundantly this year as last, but, nevertheless, are most attractive. Outstanding named varieties are Autumn Beauty, with its large, orange-scarlet berries, and Carmine, the fruits of which are covered with a purplish bloom, but many of the unnamed hybrids show great promise, in particular a seedling with hanging bunches of fruit from three to four inches long. Berries are not the only attraction afforded by the Barberries, as may be seen in the case of B. yunnanensis, the new shoots of which are now bright carmine.

Most of the black fruits of Pyrus melanocarpa, the leaves of which are colouring prettily, have already been taken by the birds, but there is an abundant crop of Crab Apples on a tree of Pyrus Eleyi. Upon cutting one open it will be seen that the flesh is as bright in colour as the skin. Ornamental fruits are also found on Symphoricarpus racemosus laevigatus, which has large white berries about the size of Oak-apples.

Brightly-coloured foliage is evident throughout the Society's gardens, and such plants as Parrotia persica, Chionanthus virginica and Liquidambar styraciflua stand out on account of their handsome leaves. The foliage of Ribes americanum and R. floridum has now turned crimson, and an unnamed Ribes (Farrer, 947), on the bank of the large pond, carries large numbers of scarlet berries which are packed with yellow pips.

The two small ponds in the wild garden which have hitherto been separated by a narrow walk, have now been thrown into one and a very great improvement has resulted. Grass has in some places been sown down to the water-edge and new paths have been formed from which the visitor is able to appreciate more fully the many interesting features to be seen in this part of the gardens. Among them are some old trees of Mulberry, Medlar and Salix babylonica, backed by dark Pines, and an old Apple tree covered with Clematis Vitalba, now in fruit, which shows up well against the purple Prunus behind it. On the island are trees of Salix regalis, cut-leaved Alder and Sciadopitys verticillata, while at their feet are large clumps of Osmunda regalis, the fronds of which seem to have coloured exceptionally well this season. Not far from this pond a clearance of the undergrowth has brought into greater prominence a fine old tree of Crataego-Mespilus grandiflora, planted by the Mr. Wilson who made the original wild garden. The branches overhang an area of approximately one thousand square feet and carry a fair crop of red fruits.

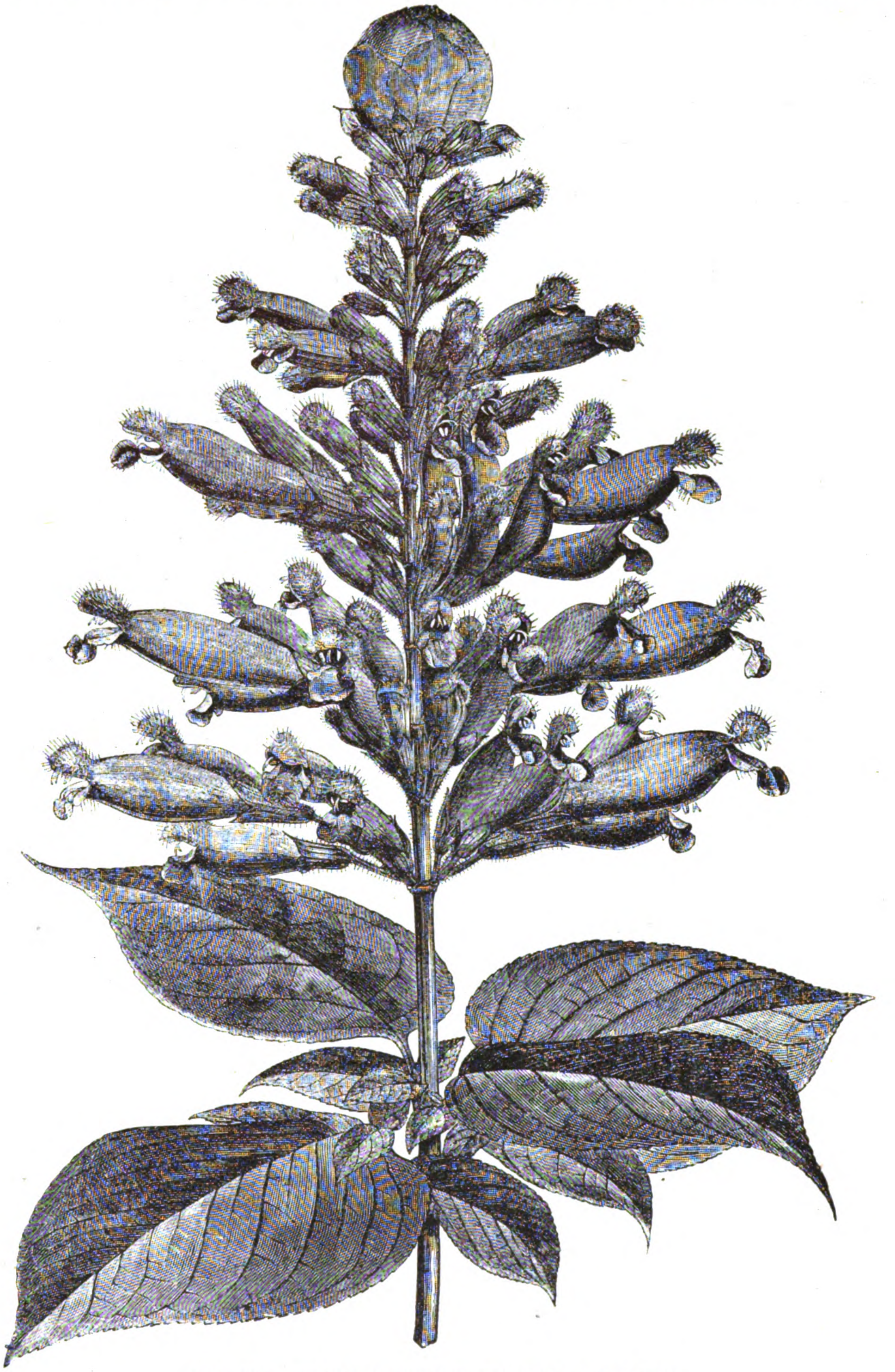

FIG. 163.—SALVIA INVOLUCRATA VAR. BETHELLII.
(see p. 356).

In the alpine house Scabiosa graminifolia and the yellow-flowered Oxalis lobata are in flower, while in the adjoining frames Crocus speciosus pulchellus, C. niveus and C. iridiflorus are blooming. Crocus asturicus is in flower in the rock garden, where Polygonum affine, P. vaccinifolium and such shrubs as Abelia grandiflora are still showing bloom.

During the first fortnight of October several degrees of frost were registered, but up to October 16 the Dahlias on trial were not affected. *J. E. Grant White.*

NOTES FROM GLASNEVIN.

Proustia pyrifolia.

This robust climber (*Bot. Mag.*, t. 5489), belongs to the Compositae, and is allied to the Mutisias. Unlike them, however, it presents no baffling problems of cultivation or propagation. Planted at the base of a wall in reasonably good, moist soil it will quickly reach a height of twelve to fifteen feet. The main shoots may be fastened to the wall and the laterals allowed to hang down naturally. These produce panicles of flower heads (Fig. 162, p. 350) towards their extremities in late autumn. In spring the shoots which flowered the previous autumn may be shortened and the weaker ones which did not flower left intact. The individual flowers are not large but numerous, white with a tinge of purple, the effect being heightened by the pappus which develops and persists as the flowers fade. The leaves are ovate, shortly stalked, green above and downy below, the margins more or less widely-toothed. Introduced by Messrs. Veitch and Sons of Chelsea, prior to 1864, this might prove an interesting climber to those who care for late-flowering shrubs: it should be given a sunny position in order to ripen the summer shoots.

Lagerstroemia indica.

Belonging to the Loosestrife family (Lythraceae), the Lagerstroemia genus contains many species, but few of them are in cultivation. The subject of this note (*Bot. Mag.*, t. 405) is probably the best known, and is a remarkably interesting and ornamental bush or small tree when in full flower. The late season at which the flowers are produced (September to October) has probably led to its being neglected as an outdoor shrub, but it is hardier than is generally supposed. There is an old plant here growing in an angle formed by the junction of two greenhouses and it has never been seriously injured by frost, although now at least fifteen feet high and bearing many flower panicles at the ends of the shoots of the current year. Frequently the flowers do not get beyond the bud stage, but this year many of them have opened, and there seems no reason why this species should not succeed in the south and west of Ireland and in the mild districts of Great Britain. The leaves are alternate, oval and stalkless. The calyx is green and bears the spreading corolla lobes, which are deep pink.

Mr. E. H. Wilson collected L. indica in West Hupeh, and he states that it is common round Ichang and westwards into Szech'uan. It is also said to be cultivated in gardens and round temples where white, pink and carmine-coloured forms are common. I am not aware whether plants from Chinese seed are in cultivation, but if so they may be worth attention. Professor Bailey (*Cyclopaedia of American Horticulture*) describes it as common everywhere in the southern states, in various-coloured flower forms; further north it requires the protection of a greenhouse. This refers, of course, to cultivated plants.

Sedum Chanetii.

This little-known species is figured and described by Dr. Praeger in his monograph of the cultivated Sedums published in the *Journal* of the Royal Horticultural Society, Vol. 46, p. 165. It is probably not hardy, but makes an interesting group in a pan, and may be grown in the alpine house or even with the protection of a cold frame. The barren or non-flowering shoots form rosettes of fleshy, linear leaves, each tipped by a spine, and in that condition resemble Sedum spinosum. In some instances the shoots are short and the rosette of leaves rests on the soil; in other cases the shoots elongate carrying the leaves above the soil. Frequently the inflorescence is pyramidal, especially when the rosettes are strong and grown singly, but occasionally numerous offsets are produced before flowering, and then the inflorescences are weaker, less densely flowered, and do not stand so stiffly erect. This seems to be a question of cultivation in the same way that it is advisable to remove the offsets from Saxifragas of the Cotyledon type in order to obtain stronger flower panicles.

S. Chanetii is a native of China and was collected by Farrer and by L. Chanet, after whom it is named. From notes supplied by Mr. Farrer (*loc. cit. supra*) it appears to be a species of hot, dry positions, never reaching the alpine zone, yet its hardiness requires further testing, since some at least of its kindred vegetation, viz., Hedysarum multijugum and Incarvillea variabilis are tolerably hardy. The general effect of the flowers is white, though the calyx and outside of the corolla are spotted with red and purple, but this is not conspicuous in the fully-open flower.

Cyananthus Delavayi.

Seeds of this charming species were received from Mr. A. K. Bulley in 1925, and the plants flowered in September and October of this year in a cold house. The habit is procumbent, the stems wiry and much branched, the leaves small, not more than a quarter-of-an-inch in diameter, and less than half-an-inch long, including the slender petiole, the margins shallowly but distinctly toothed, both surfaces furnished with short, white hairs. The flowers are produced singly at the ends of the shoots; they are about half-an-inch wide when fully expanded, the corolla pale blue with a conspicuous ring of hairs at the throat where the distinctly five-rayed stigma is prominent. The calyx is green, the segments acute, and the whole thickly furnished with white hairs on the outside. The appearance of the plants at present suggests that it is little more than an annual.

A more promising species is Captain Kingdon Ward's No. 6082, not yet named here. This was raised from seeds received from Lord Headfort and looks more hopeful as a perennial. This species is more vigorous, forming longer, unbranched summer shoots, and is now forming a rosette of shorter winter shoots at the base, and if able to withstand the rains of winter, should form good plants next summer. In this case the shoots are thickly clothed with small, linear lanceolate leaves densely furnished with white hairs, giving the plants a hoary grey appearance. The flowers are produced at the extremities of the branches; they are as large as those of some forms of C. lobatus, and of a beautiful light blue colour.

Eustoma Russellianus.

Seeds of this handsome plant of the Gentian family were received from Cambridge Botanic Gardens, in May of last year. They germinated freely and a group of several dozen plants has been a feature in the show house for some weeks. The stems average about two feet high, bearing opposite, stem-clasping leaves, ovate in shape and tapering to a point; they are quite glabrous and of a glaucous green colour. The flowers are produced in a loose panicle at the apex of the stems and appear in succession for many weeks. The corolla is large, rather bell-shaped, with spreading lobes, purple in colour, which is much deeper at the throat. The five-parted calyx is composed of long, awl-shaped segments.

This species is a native of Texas and Mexico and is easily grown in an ordinary potting compost of loam, leaf-soil and sand. When large enough to handle, the seedlings may be pricked off into boxes, and during summer will succeed in a cold frame but should be removed to a cool greenhouse in winter. In early spring they may be placed singly in five-inch pots and returned to a cold frame for the summer, or until pushing up the flowering stems. An alternative method is to prick out three seedlings in a three-inch pot and pot on without disturbance into six-inch pots. Whichever method is adopted careful handling is essential as the roots are impatient of disturbance. Careful watering is necessary at all times and especially when the plants are flowering. An overdose of water kills the roots at once. *J. W. Besant.*

GARDEN NOTES FROM SOUTH-WEST SCOTLAND.

Nerine Bowdenii shares with Amaryllis Belladonna the decorative defect of putting forth its lovely flowers after its leaves have disappeared. This may be overcome by planting the bulbs beside some herb to provide a screen for the bare stems, preferably one with glaucous foliage. The silvery-green leaves of Senecio Greyi contrast admirably with the lively rose of Nerine; but that New Zealander soon becomes too robust to be a safe neighbour. Convolvulus Cneorum is much less aggressive, and in mild districts is perfectly hardy under a south wall. Nerine is far less impatient than Amaryllis Belladonna of sunless, wet summers. These the Amaryllis resents by giving us few of its rosy blossoms; but no matter what may be the character of the season, Nerine never fails to play up cheerfully.

In the woodland Cercidiphyllum japonicum always leads the van in autumnal colour. A purple flush suffuses the foliage so early as August, changing slowly later through yellow to luminous carmine. It possesses this merit as compared with some other trees that blaze brilliantly in the fall, in that it keeps its leaves firmly long after they have changed colour, enabling one to use the sprays for indoor decoration; whereas Parrotia persica, its rival in brightness, drops them with undue haste. This year, however, a violent nor'-wester on October 9 has ruined the display, and our Cercidiphyllums stand untimely bare.

This beautiful tree, the largest deciduous tree in Japan, has never met in this country with the favour that it deserves, and the reason for this seems pretty clear. All depends on the strain of seed from which it is raised. Many years ago we raised here several thousands, all of which displayed in the seed-bed the intense crimson referred to above; but the plants raised from another batch of seed by that enthusiast the late Sir George Holford, have never flown any colour but yellow. It is not a matter of soil or climate, for some plants of our raising which we sent to Westonbirt are conspicuous by their rich colour among those grown by Sir George.

Vaccinium corymbosum, being of lowlier stature than Cercidiphyllum, has escaped damage from the gale, and bushes seven and eight feet high stand draped in glowing blood-red. Somewhat taller is Clethra alnifolia, striking a different note of colour, its ample foliage having turned a rich tawny yellow.

Enough use is not made of our native Cuckoo Pint—Arum maculatum—and A. italicum to brighten the borders and woodland paths in autumn. At that season they bear dense columns of shining, orange-scarlet berries, and if these happen to stand among the purple blossoms of Crocus speciosum the colour contrast is very satisfying. So soon as the fruit is scattered these Arums put forth handsome, hastate leaves which cover the ground through the winter.

Self-heal, Prunella grandiflora, may be treated so as to make a pretty show of purple flowers in autumn. Its normal season for blooming is July and August; but if the flowers are cut off when faded, a fresh crop is produced in September and October, well nigh as plentiful as the earlier one. The variety weighted with the epithets Webbiana major is richer than the type.

The genus Cimicifuga deserves a prettier name than Bugbane which our ancestors bestowed upon it on account of its reputed effect in expelling a certain objectionable heteropterous insect. They are all beautiful plants; the finest of them, the Japanese Cimicifuga simplex, delaying to display it snow-white spires till October, when most herbaceous perennials have gone to seed or sleep.

Many pretty annuals pass too quickly out of flower to satisfy one. That is not the case with Echium plantagineum, which produces sheaves of violet blossoms continuously from June until stopped by frost. It is still, on this 18th October, in much beauty. *Herbert Maxwell, Monreith.*

ARTIFICIAL LAKES AND POOLS.

The building and enlarging of an artificial lake or pool is not always a work which can be undertaken without involving some legal responsibility on the part of the owner. There is always the risk that these artificial waters will overflow or break away, with disastrous results to their owners and neighbouring gardens, and when this happens the question arises: "Shall I have to pay for the damage done?" And this is indeed a serious question for the damage done may well be considerable. The Courts have decided in a famous case, which had to deal with the liability of one who collects water by artificial means, that "an occupier of land who brings and keeps upon it anything likely to do damage if it escapes is bound at his peril to prevent its escape, and is liable for the natural and probable consequences of its escape, even though he has been guilty of no negligence." To keep water in an artificial pond is considered by the law to be dangerous, and therefore, should it escape, whether the owner is negligent or not, he will be responsible for any damage done. He is, in fact, the insurer of his neighbours against any damage it may do.

It should be noted, however, that only such damage as is the natural and probable consequence of the escape of the water will have to be compensated, so that if the damage done is too remote to come within this limit, then the liability is to that extent diminished.

Then again, if the water is "naturally" as opposed to "artificially" on the land, the rule of absolute liability does not apply, so that an occupier is not bound to prevent damage being done to his neighbour's property by the natural escape of flood water. And further, it has been held that he cannot be made responsible for the overflowing of a stream on his land caused by the growth of weeds and the deposit of silt at the bed of it. In this connection it should be remembered that a man may take any precaution he likes to prevent flood water coming on to his property, even if the result of such precaution is to divert the water (when it comes) on to the property of someone else, but when once the water has reached his property he will be liable in damages if he turns it off on to that of his neighbour.

Returning to the liability which arises in consequence of the overflowing of artificial waters, it is a good defence to plead that the damage was caused by the act of some third party. Thus where some such water was caused to overflow because another owner higher up emptied his own artificial waters into the stream which fed the lower waters, the owner of the latter could not be made responsible for the damage done. Another good defence is what is known as "Act of God," which can be raised when the damage is caused by some *vis major*, or Act of God over which the defendant could have no control. Again, there is a case to illustrate the point; here the defendant was owner of some artificial pools formed by damming a natural stream. The embankment and wiers were all well-made and alleged to be adequate for ordinary purposes, but on the occasion of the damage, a violent storm broke down the embankment and the rush of water down the stream caused considerable damage. The owner, however, could not be held liable since there was no negligence on the part of any one, and the damage was the result of an "Act of God."

There is still one more defence which can be set up, and that is where the water is collected in pursuance of some statutory authority. As, however, such an authority is usually only given to public bodies, it is an exception of which the private owner will not be able to avail himself. *H. A. S.*

INDOOR PLANTS.

DIPLADENIA BOLIVIENSIS.

This species is distinct from all other Dipladenias and succeeds much better in cultivation than the majority of its congeners; the flowers are white, two inches across, with a golden yellow throat. They are produced freely over a very long period; indeed, the plant is in flower for practically the whole of the year. The racemes are terminal or axillary and three- or four-flowered.

The leaves are oblong, acuminate, glabrous; the stems slender but of strong, sturdy growth. This exotic is a most desirable plant and makes an excellent subject for furnishing pillars or rafters in a warm house. It thrives in peat and needs a warm, moist atmosphere. A stock is easily raised from cuttings.

D. boliviensis was introduced from Bolivia in 1866, and is figured in *Bot. Mag.*, t. 5,783. *Ralph E. Arnold.*

MAURANDYA BARCLAYANA.

This is probably the best known of the Maurandya, and a plant worthy of wider cultivation. It is a native of Mexico, whence it was introduced about a century ago.

The trailing habit makes it an ideal basket subject for the cool greenhouse, where it will bloom throughout the summer and autumn.

The tubular flowers are of a violet-purple colour, and a well-grown plant is very effective. A stock is readily raised from seeds, which if sown early in the year will provide plants that will bloom the following summer and autumn.

M. Barclayana is also suitable for growing in the open if treated as an annual, and there are numbers of warm spots on the rock garden where it would succeed.

This plant may also be increased by cuttings formed of young shoots and inserted during August in a little warmth. A suitable rooting medium consists of good sandy loam and a little leaf-mould. It is thriving and flowering freely in a cool greenhouse here. *T. W. Briscoe. Chepstow.*

CHIRITA MARCANII.

This handsome Gesneraceous plant (Fig. 154, p. 352), which received an Award of Merit at the R.H.S. meeting on the 19th inst., has recently been described by Professor W. G. Craib, Director of the University Botanic Garden, Aberdeen. He first received it from Dr. Kerr, who collected seeds near Bangkok, Siam.

About a year ago, Professor Craib sent to Kew a plant in flower, and although it was badly damaged during transit, it lived long enough to mature a few seeds. These were sown during the latter part of February and placed in a propagating case, where they quickly germinated. Grown on as a stove plant, it thrives under similar treatment to that afforded Gloxinias and Gesneras.

Chirita Marcanii forms an erect, much-branched plant, two to three feet high. The deep orange-coloured flowers are borne on short peduncles in the axils of the leaves. The corolla is funnel-shaped, about one-and-a-half inch long and one inch broad. The leaves are hairy on both surfaces, of a light green colour, from six inches to nine inches long, and from two-and-a-half inches to three-and-a-half inches broad. This charming plant is very ornamental and effective, and it should make a valuable addition to any warm greenhouse. *T. W. T.*

NEW HYBRID ORCHIDS.

(*Continued from October* 2, *p.* 266).

Name.	Parentage.	Exhibitor.
Adaglossum citrinum	Odm. Pescatorei × Ada. aurantiaca	J. B. Adamson, Esq.
Brasso-Laelio-Cattleya Neptune .	L.-C. Serbia × B.-C. Cliftonii magnifica	Charlesworth & Co.
Cattleya Bridal Veil	Lady Veitch × Mendelii alba	Sanders.
Cattleya Cyrus	Thurgoodiana × Cybele	Sanders.
Cattleya Gisie	Dowiana × Dionysius	Sutton Bros.
Cattleya Ivorine	Hesta alba × Hardyana alba	Charlesworth & Co.
Cattleya Kathleen Scott	Iris × Acis	Sutton Bros.
Laelio-Cattleya Chantilly... ...	C. Warneri × L.-C. Martinetii	Stuart Low & Co.
Laelio-Cattleya Francois Coppee...	L.-C. Lucasiana × C. Warscewiczii	Vacherot and Lecoufle
Laelio-Cattleya Maureen	C. Dowiana × L.-C. Canhamiana alba	Sanders.
Laelio-Cattleya Seine	C. Gaskelliana × L.-C. Martinetii	Stuart Low & Co.
Laelio-Cattleya Warham ...	C. Warscewiczii × L.-C. Gladiator	Sutton Bros.
Odontioda Carmenea	Oda. Leon Perrin × Odm. crispum	Charlesworth & Co.
Odontioda Rosandra	Oda. Orion × Oda. Cardinale	Charlesworth & Co.
Odontioda Valencia	Oda. Arlotta × Odm. St. James	Charlesworth & Co.
Odontoglossum Helga	Gorizia × Tityus	Charlesworth & Co.
Odontoglossum Alcida	Melanthus × Aquitania...	Charlesworth & Co.
Odontoglossum Whiterock ...	Olympia × President Poincare	J. B. Adamson, Esq
Odontonia Europus	Odontonia Corona × Odm. Gorizia	Charlesworth & Co.
Sobralia Jeanette	Veitchii × Charlesworthii	Charlesworth & Co.

NOTICES OF BOOKS.

Lime in Agriculture.*

The book is a discussion of the various forms or combinations of lime, the chemistry of it, the sources of the material, and its uses in agriculture, though a slight modification of the instructions given would make the book suitable for garden practice. The author makes no claim to originality, but presents the subject in the concrete form of a book, as understood by himself, and as collated from different sources to which he gives references. The functions of lime in the soil are chemical, mechanical, and biological, and he gives nine very good reasons for its use under different conditions. Various remedies have been tried for preventing or checking the fungus that produces finger-and-toe in Cruciferous crops, but nothing has proved so suitable as lime in some form or other. All experimenters appear to be agreed that lime shows no beneficial effect the first year of application, but many consider that good effects may be obtained the second year. The percentage of sound Turnips keeps increasing, however, from the fourth year of treatment onwards. Some gardeners claim to have eradicated club-root or finger-and-toe from the garden by trenching and good cultivation. Some farmers would deny the efficacy of lime, if they failed to get results the first year. Others even scoff at the idea that their land requires liming for any purpose, although their Turnips are rotting with finger-and-toe and the leaves turning yellow.

In some parts of the country it is certain that nothing has been done to check finger-and-toe for the last fifty years or more, and it is probable that only long rotations have enabled Turnips and Swedes to be cultivated at the present day, in the absence of liming. There is much need that this and other books on the subject should stir up the farmers and enable them to overcome their apathy, conservatism and aversion to co-operate with one another, in order to get cheaper transit for the materials required. It is here shown that the continuous use of sulphate of ammonia on the land depletes its lime content sooner that nitrate of soda.

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* *Lime in Agriculture. A Handbook for Practical Farmers, Students and Others.* By Frank Ewart Corrie B.Sc., N.D.A., N.D.D. London: Chapman & Hall, Ltd., 11, Henrietta Street, W.C. 2. 1926. Price about 3s. 6d. net.

The duration of an application of lime on grass land is stated to be seven years, but only five on cultivated land. In discussing the various materials that will supply lime to the soil the author mentions the sea sand that is used by the Cornish farmers, but does not mention the composition of that sand. Lime could only be supplied by sea sand containing finely comminuted shells of sea animals in some proportion, or consist wholly of these comminuted shells, the use of which is not confined to Cornwall. Silicious sand, if pure, could contain no lime.

The second part of the book deals with the necessity of lime for the formation of bone, especially in young animals, and the instructions are to lime the land for farm crops, to feed the animals with Lucerne or Clover hay and ensilage. In the absence of these, the animal food is to be treated with lime in some form. The rearing of pigs, calves and the feeding of poultry is cited as cases where this sort of feeding has proved highly beneficial, and poultry farmers are convinced of its utility. There be many in this country, however, who do not regard the question of lime as a very serious matter.

The book has been well edited, and we have observed no clerical errors.

Roses and Their Culture.*

THE utility of a book is largely dependent upon it being written in language suitable for the people for whom it is intended. This one is intended for amateurs who grow their own Roses, and the instructions given are both simple and practical. The author mentions two cases in which the soil may be excavated to a depth of three feet, namely, when the drainage is bad, and when it is light and porous in an arid part of the country. Where these conditions do not prevail, he considers it sufficient to turn it to the depth of eighteen inches, because the roots of Hybrid Teas and Perpetuals do not extend lower. Bone meal is sometimes used at the rate of one ounce to the cubic foot of soil, the two being thoroughly mixed during soil preparation; as a top-dressing, later, one pound to twenty-five square feet is recommended. This is certainly liberal, and probably only practised by the wealthy amateur.

The best all-round stock is said to be Rosa multiflora japonica, which may be less vigorous than the Grifferae, which is chiefly used for climbers in Britain. In America, there is a practice of grafting Roses in March and April, planting them on benches in greenhouses and selling a crop of Roses to pay for the operation. The plants are then potted and started into growth for sale in spring. An immediate effect is obtained, and the large plants take the eye of amateurs. The author condemns these Roses except for immediate effect, because they have large tops and a crippled root-system, and the plants soon decline in vigour compared with smaller, field-grown Roses. He strongly advocates planting in late October and November because hot sun and drying winds damage spring-planted Roses, and necessitate shading and spraying. The rules for planting are much the same as in Britain, except that amateurs are recommended to cut off half the top. In a chapter on soils and fertilisers, the author states that potash manures give a green colour to the foliage of Roses, and that some growers claim that mildew can be controlled by them. In another part of the book he states that this has been proved by experiment with infected plants. Cow and sheep manure may be bought in pulverised form in the States; but farmers here would not be likely to part with it.

In giving instructions for the recognition of a sucker from the stock, the author states that it bears seven to nine leaflets to a leaf, while the budded Rose bears only three to five. That is not strictly correct, because many of the modern Roses bear seven leaflets to a common stalk, when strong stems arise from the base of the plant.

Roses in America have to struggle with the heat of the summer and the severity of winter. An effort has to be made to ripen off the growths by ceasing to feed by the first of August, ceasing to cultivate after the end of that month, and by cutting back one foot of each shoot after the first frost. Late in autumn the Roses are mounded up with soil, ramblers are pegged down, covered with soil, and when the latter is frozen it is covered with eight to ten inches of stable manure or leaves to keep it frozen till spring. Hard wood cuttings of ramblers, Hybrid Perpetuals and other hardy Roses are made in autumn, tied in bundles, stood upright and buried, like the plants, till spring.

Nine parts of sulphur to one of arsenate of lead are used in the form of a dry powder for dusting Roses as a preventive to chewing insects, mildew and black spot (Actinonema rosae). It will surprise some of our rosarians to know that Rose blooms coming too early for an exhibition may be retarded for ten days or more in a box with lumps of ice near the stalk ends, or in a refrigerator.

There are a few errors in the spelling of Rose names, but that is of common occurrence when the Roses get away from their country of origin. The book contains a dozen photographic illustrations, some line drawings, and the large text is admirable. It is a good contribution to the literature of Roses, and a British grower could get useful hints from it.

Tomato Production.*

THIS book, by Paul Work, is devoted to the production of Tomatos in the United States of America, and so far only as related to field culture, which is carried on there far more extensively than is possible in Britain, owing to the much greater warmth of its continental conditions, and latitudes and longtitudes extending into vast areas of warm country. The food value of the Tomato has now been estimated at a far higher level than in John Gerard's time, when he said of "love Apples" that "they yield very little nourishment to the bodie and the same naught and corrupt." The vitamine content is now estimated at vitamine A, two points; vitamine B, three points; and vitamine C, three points. All these points the Tomato retains, whether it is raw, cooked or canned, and only loses one point when dried before being used as food. The Tomato ranks third amongst vegetable crops for acreage and value as grown for canning and shipment. It is one of the three leading greenhouse vegetable crops and may be the leader in future; it is the leading canned vegetable.

The author tells us that a Tomato plant grew over forty feet long in a Cornell greenhouse, and is perennial in the tropics. The habit of the plant is indeterminate and each branch may grow so long as the resources of the plant will permit. The stem and branches are sympodiums, however, and each is really very short, and terminated by each successive cluster of flowers, elongation being due to a new axillary axis, though not so described by the Professor. The Tomato is a warm season crop, cloudy weather being unsuitable. Fruit will ripen in the field four to five weeks from setting. Length of day is a factor in setting the fruit, even in the south during winter. Electric light has been used with marked increase, but is costly. From 125,000 to 150,000 seeds go to the pound, and one ounce of seed will furnish plants for an acre. Good workers transplant 6,000 to 10,000 seedlings a day. Some growers advocate the shortening of leaves, and others pinch the plants to get first-early fruits, but most condemn the practice. In one case the Indiana Experiment Station sowed the seeds in four-inch veneer soil bands, eight weeks before field planting, and without being transplanted. The result was a yield of nearly fifteen tons to the acre. There was a distinct gain in earliness, the plants being reared in heat. Seedlings reared in outdoor seed-beds were nearly a month later, giving a crop of little over five tons to the acre.

Of the three fertilising elements (phosphorus, potash and nitrogen), phosphorus is the most important, and from one-third to one-half of the total of this in the plant is found in the fruit. Phosphorus is conducive to earliness, potash retards it. The maintenance of humus in the soil is of great importance; and a complete manure applied at the time of planting (outdoors) is favourable to early maturity. Six hundred pounds of a complete fertiliser and twenty tons of manure gave twelve tons of ripe fruit to the acre, while double the weight of fertiliser, without manure, gave only a ton-and-a-half extra.

An extensive form of cultivation in America is to plant the Tomatos three-and-a-half to seven feet apart each way and allow the plants to sprawl over the ground, and develop branches as they like. Many stake and disbud them to keep the plants to one stem, but the stakes and labour about balance the profit by the two methods. Tomatos in America are liable to attack by eighteen insects, stem eelworm, and six or more diseases. Large fruits seem to be favoured, since illustrations show fruits three-and-a-half inches wide and three inches deep, by the side of a rule. Marketing, yields, costs, and profit are dealt with, making the book useful to the commercial grower in America; but many useful hints with regard to successful Tomato production could be gleaned by growers in this country.

The book has twelve illustrations, largely relating to the results of experiments, is well-edited, and the large type used is excellent.

PUBLIC PARKS AND GARDENS.

THE application of the Merton Urban District Council for sanction to borrow £17,610 for the purchase of Cannon Hill Park, consisting of fifty-two acres of the Cannon Hill Estate was the subject of an enquiry by the Ministry of Health on the 12th inst. Mr. C. J. Mountifield, Clerk to the Merton District Council, stated that his Council has jurisdiction over forty-nine acres of open spaces for a population of 22,000. The Council hoped to raise fifty per cent. of the purchase price from local authorities, the City of London Corporation, organisations interested in open spaces and residents. It was not proposed, he said, to enclose the park, but allow it to remain open like Wimbledon Common. Col. Vaughan-Morgan, M.P., of the National Playing Fields Association, stated that his society hoped a portion of the land would be available for playing fields. There is a lake in the park and this would be available for boating.

THE proposal to erect a generating station on the Duke's Meadows at Chiswick has a certain bearing of horticultural interest, for if the scheme is not adopted, the alternative site suggested is Syon House, Isleworth, which at one time was one of the most famous gardens in the country, and contains some remarkably fine specimens of rare trees. It will be remembered when the scheme was first proposed it was considered by many that the erection of such an electrical station so near to Kew Gardens would be inimical to the growth of plants at Kew, but Mr. Rider, the electrical expert to the Electricity Authority, stated that any fumes coming from the works would not affect plant life in the Botanic Gardens. Barnes District Council, which is opposed to the scheme, desires that the Duke's Meadows should be retained intact, in which case Barnes will probably assist the Chiswick Council in the purchase of Chiswick House by making a money grant if necessary. The conditions attached to this money grant are, besides retaining the Duke's Meadows, that the £45,000 which the Chiswick Council would receive for the mineral rights should be devoted to the purchase of Chiswick House.

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* *Roses and Their Culture.* How to Propagate, Grow and Exhibit Outdoor Roses in America. By S. C. Hubbard, Department of Floriculture, Massachusetts Agricultural College. Illustrated. New York: Orange Judd Publishing Company. London: Kegan Paul, Trench, Trubner and Co., Ltd. 1926. Price $1.50.

* *Tomato Production*, by Paul Work, Professor of Vegetable Gardening, Cornell University. Illustrated: New York: Orange Judd Publishing Company, Inc. London: Keegan Paul, Trench, Trübner & Co., Ltd., 1926. Price $1.25.

FRUIT REGISTER.

PLUM JODOIGNE GREEN GAGE.

This very handsome form of the Green Gage is but little cultivated and seldom listed in catalogues, but it is worthy of planting in any collection for it is a most delicious early Plum, ripening at the end of July. The fruits are somewhat similar in shape and size to those of the ordinary Gage (Fig. 164); they become greenish- yellow as they ripen and develop a brownish-red tinge on the side next to the sun, the whole covered with a thin blue bloom.

The flesh is whitish yellow, very richly flavoured and very juicy. Most growers will agree that no other Plum excels the best of the Gages for flavour and high quality generally, therefore Jodoigne Green Gage may be well included in the list of Plums intended to be planted in gardens this autumn.

FRUIT GARDEN.

APPLES AND PEARS IN MORAYSHIRE.

That doyen of northern Scottish gardeners, Mr. Charles Webster, gardener to the Duke of Richmond and Gordon, Gordon Castle, Morayshire, has had on display a magnificent collection of Apples and Pears in the windows of Mr. T. L. Mann, florist, Elgin, grown at Gordon Castle. Competent judges declare that for size, shape and colour the fruits could not be surpassed.

Among the numerous varieties of Apples shown are: Cox's Orange Pippin, Barnack Beauty, Batchelor and Charles Ross—truly exquisite specimens. Conspicuous, too, are fine samples of Lord Lambourne, Ellison's Orange, Lord Hindlip, Sir John Thornycroft, Laxton's Superb, Queen Caroline, Queen Mary, Peasgood's Nonesuch, Cutler Grieve, Ontario, Allington Pippin, Guelph, Golden Reinette, Houblon, King of the Pippins and Madresfield Court.

The exhibits of Pears, all finely-grown, shapely specimens, include Pitmaston Duchess, Marie Benoist, Durondeau and Doyenné de Comice.

Decades have passed since Mr. Webster became famous as a cultivator and exhibitor of fruit, the annals of the great horticultural show in London and Edinburgh fully bearing out this fact. True, the favourable climate of Morayshire is in Mr. Webster's favour, but such fine exhibits could not be attained unless coupled with great skill by the grower. *W. K.*

APPLES OF HIGH COLOUR.

I should like to add one or two Apples to the list which Mr. Ralph E. Arnold gives of Apples of high colour. It is, of course, hardly necessary to mention Worcester Pearmain and Devonshire Quarrenden, they are almost too well-known. Worcester Pearmain is, I suppose, one of the most profitable market varieties, but as it quickly loses flavour and quality after being picked, it has a bad name, yet millions of folk fall a victim annually to its attractive appearance in the shops. Personally, I think it a very good Apple indeed, if eaten straight from the tree and if one likes a soft, juicy, aromatic Apple. Devonshire Quarrenden is another fine red Apple, an early variety, which should be eaten straight from the tree, as it soon deteriorates if kept.

An Apple of recent introduction and attractive appearance, brilliant colour and very high quality, is Redcoat Grieve. It is a sport from the well-known James Grieve which appeared some years ago at Letchworth, Herts., on the nursery of Mr. Hal Jones. It is identical in every respect with James Grieve, except that it takes far more brilliant colour than the type.

Sops in Wine is an old Apple of which I am very fond for its rich, red colour, aromatic flavour, spicy smell and also for the distinct tinge of pink which runs right through the flesh. I have only grown it for three years, as a pyramid, but it has fruited freely and consistently ever since I planted it. It is in season at the present time. This year the little tree was laden from top to bottom with fine fruits, a very handsome and pleasing sight in a bad Apple year, and, really, the Apple is almost worth growing for its delicious perfume alone. I saw it shown at the R.H.S. Hall some years ago by Messrs. Stuart Low and Co., and Mr. Laurence Cook gave me a fruit to try, with the result that I immediately ordered a tree.

For purely ornamental value, the John Downie Crab is hard to beat. The tree is magnificent in blossom and a glorious sight when laden with its countless little Crabs in autumn, oblong in shape, yellow in colour, with brilliant red cheek, and the fruits have a very beautiful waxy, semi-transparent appearance. John Downie can hardly be counted as a dessert variety, though it is brisk, juicy, and of good flavour, but it is perhaps, a little too brisk, for most palates. For making jelly, however, it is unrivalled, and wherever possible, this very ornamental tree should be included among the ornamental subjects planted. *Clarence Elliott, Stevenage.*

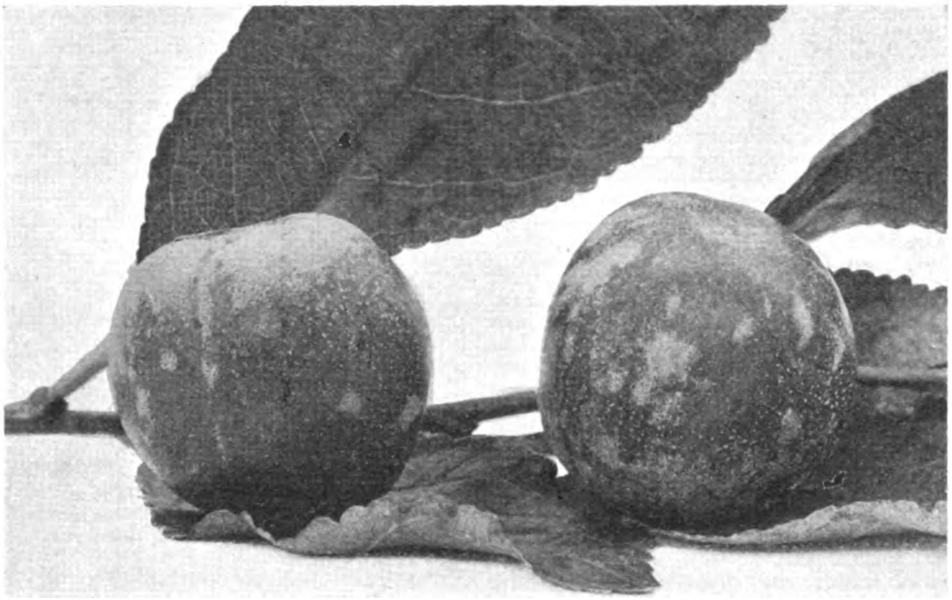


FIG. 164.—PLUM JODOIGNE GREEN GAGE.

REMARKS ON THE CONDITION OF THE FRUIT CROPS.

(See Tables and Summaries, Ante, pp. 111-117).

(*Continued from p.* 336.)

WALES.

Carnarvonshire.—All fruit trees blossomed profusely. Cherries dropped badly during the stoning period. The Strawberry crop suffered through drought. Our soil is very light and gravelly, the subsoil gravel, therefore crops feel the effects of dry weather acutely. *J. S. Higgins, Glynllivon Gardens, Llanwnda.*

Denbighshire.—Following a very early and severe autumn and winter, fruit trees enjoyed a long rest. February was abnormally warm, causing the buds to swell very rapidly. The following month proved very dry and cold with a rainfall of only 0.64 inch. April came in very warm, the thermometer registering 72° on the 2nd and 4th. About this time the profusion of blossom generally gave great hopes for a bumper fruit season, but during the latter part of that month and also May, prospects were somewhat changed when very cold winds and frosts caused much damage, especially to the Apple crop. Black Currant bushes were defoliated, caused by blight and frost, while many of the fruits were frozen. Gooseberries in exposed positions were also frozen, causing, the fruits to drop very freely. Aphides are and have been very troublesome throughout the season, all forms of vegetation being badly attacked. The soil generally is of a retentive nature. *R. H. Crockford, Horsley Hall Gardens, Gresford, nr. Wrexham.*

——The fruit crops are very disappointing after the great wealth of blossom. All kinds of fruit trees flowered abundantly, but owing to the very low temperatures during the first fortnight in May our hopes of a bumper crop were destroyed. Most varieties of Apples are under an average yield. Pears are much more numerous, having passed the critical point before the cold weather set in. Black Currants were a failure. Strawberries were a heavy crop of excellent quality fruits. The soil is rather stiff and cold, overlying marl. *J. A. Jones, Chirk Castle Gardens, near Wrexham.*

——Considering the abnormally cold spring, the fruit crops are better than one expected. Apples, although an average crop, are inclined to be patchy; some trees are very lightly cropped, whilst the fruits on others have required to be thinned severely. Of small fruits, Gooseberries and Red Currants were poor, but Black Currants, Raspberries and Loganberries all gave heavy yields. Strawberries were the best crop both in quantity and quality that we have had for several years. *F. C. Puddle, Bodnant Gardens, Tal-y-cafn.*

Flintshire.—The fruit crops genrally are good: small fruits were very plentiful and Peaches and Nectarines on a south wall exceptionally good. Apple trees flowered well but owing to frost the fruits failed to set. Strawberries flowered and set their fruits well, but lack of rain resulted in the berries being very small. *J. L. Eversfield, Penbedw Hall Gardens, Nannerch, North Wales.*

Glamorganshire.—Apples and Pears are average crops. The yield of sweet Cherries and Morello Cherries was above the average, and the fruits were of very fine quality. Gooseberries were abundant, and the bushes free from blight. The same is true of Raspberries and Currants. The Strawberry crop was satisfactory, The Duke variety giving the best results. *C. T. Warmington, Penllergaer Gardens, near Swansea.*

MONTGOMERYSHIRE.—The general outlook at flowering time was very promising, especially in the case of Pears, Apricots and Plums. The Apple blossom was good, but the crop is most disappointing, owing to northerly winds, wet weather and frost at night at the flowering period. Although Apples are a light crop, trees of James Grieve and Charles Ross are bearing average crops of clean fruit. We had good crops of Victoria and Monarch Plums, but other varieties were very poor. Small fruits were average crops; Raspberries were very good and Black Currants and Strawberries quite up to the average. The soil is a stiff clay. *Wm. Durrant, Brookland Hall Gardens, Welshpool.*

IRELAND.

MEATH.—The fruit crops in general are not so good as they promised to be at times, in some parts of this county. I regret to state that the cultivation of fruit has not received the same attention about here as it did before the war. *Michael McKeown, Julianstown, Drogheda.*

TYRONE.—The fruit crops are, on the whole, fairly satisfactory, although hardly so good as seemed likely at the blooming period, many fruits failing to set and others falling after setting. Insects of various kinds have been rather troublesome, aphis on Plums and Cherries and the sawfly caterpillar on Gooseberries necessitating spraying on several occasions. Frost in May blackened many of the early Strawberry blooms. However, the prospect is a great improvement on the past two or three seasons. *Fred. W. Walker, The Gardens, Sion House, Sion Mills.*

WESTMEATH.—After a splendid promise of fine crops all round, the fruits were ruined by heavy frosts on May 14, 15 and 16, 7° being registered on the last date. Some late-flowering Apples, such as Royal Jubilee, are fairly well cropped, but fruit generally in this district is very scarce. *William Allan, Pakenham Hall Gardens, Castlepollard.*

LONDONDERRY.—The fruit crops generally have been disappointing, apart from Plums, and small fruits of the Currant and Raspberry tribe, which yielded extra well; the early promise during the flowering period was not maintained. Apple and Pear trees were a glorious mass of blossom but the fruits failed to set, consequently these crops are negligible. Strawberries flowered well but an extra cold snap at that time, following a fortnight of warm, bright weather ruined them. Our position is very high and exposed, with a mixed soil, for the main part on the heavy side overlying clay. *J. Chilcott, The Dogleaf Gardens, Limavady, Co. Derry.*

DOWN.—The blossom on all fruit trees was extraordinarily profuse, the flowers being strong and well-developed, but only Plums set in sufficient quantity to make thinning necessary. Damsons are a heavy crop. Most Culinary Apples are satisfactory, but the yield of dessert varieties leaves much to be desired. Pears promised well; Strawberries and Gooseberries were abundant; Raspberries and Currants were good in crop and quality. Apple trees that were sprayed with a tar distillate wash show a marked benefit, both in crop and general health, to trees unsprayed, while the use of ammonium polysulphide for American mildew was somewhat disappointing, causing complete defoliation in some varieties. The season has been rather droughty, but an ample water supply has made it possible for all crops to mature.—*T. W. Bolas, Mount Stewart Gardens, Newtownards.*

CORK.—This is a bad fruit year, with the exception of Apples, which are turning out better than was expected. Aphis and Apple sucker appear to have been our worst enemies and one of the main causes of failure. Wherever trees were sprayed with a tar oil solution, I invariably find a good set of fruit. Black Currants suffered from cold, harsh weather, and a bad attack of aphis about the end of May, and consequently this was a very poor crop. *J. Dearnaby, 17, St. Patrick's Terrace, Magazine Road.*

KILKENNY.—Blossom was plentiful on all kinds of hardy fruit trees, and the fruits set freely on Apples, Gooseberries and Currants. Strawberries were promising until the 17th morning of May, when there was 8° of frost, followed by cold nights till early June, with some frost. Dropping of Apples, Cherries, Plums, Black Currants and Gooseberries was general. Up to the 17th of May there was every promise of a record crop of all hardy fruits. Insects have been troublesome on all fruit trees. *Henry Hall, Whitehall Gardens.*

(*To be concluded*).

VEGETABLE GARDEN.

SEASONABLE WORK.

THE weather this autumn has been most favourable for undertaking work in the kitchen garden, and where the soil is of a heavy nature the ground should be turned over so soon as the summer crops have been cleared. Trenches should be made where it is intended to grow next season's crops of Peas; the trenches should be two spits wide and the same in depth, taking out the loose soil with a shovel down to the subsoil. Place a thick layer of horse manure at the bottom of the trench and mix it with the bottom soil to bring the subsoil into better condition. When this work has been completed fork both sides of the trench in until the latter is filled about one-third, then place another layer of manure, not quite so thick as that advised for the bottom, and return the soil that has been dug out, mixing both spits as the work proceeds.

So soon as Runner Beans are over clear them from the ground and treat the latter in the same way as advised above for Peas. It is not necessary to change the ground for Beans annually; I have good results by planting them year after year in the same trench.

The richer the soil the better this crop succeeds, and where it can be conveniently done I advise growing Runner Beans as near the water supply as possible, as they require copious supplies of moisture all through the summer.

Onions may be grown on the same plot of ground for several years. Good bulbs for home use or exhibition may be grown on ground that has been trenched two spits deep and enriched with a liberal quantity of manure incorporated in the bottom of the trench. Leave the surface soil as lumpy as possible so that frost can penetrate it freely during the winter.

Ground that will be cropped with early Cauliflowers next season should be manured, dug two spits deep and the surface laid up in a rough state. After exposure to the winter weather the soil will be friable in the spring and work down to a fine tilth.

The ground for early Potatos may be ridged for the winter. If there is a shortage of manure, it is a good plan to sow Turnips broadcast so soon as the tubers have been lifted, and dig them in as green manure. As the work of ridging proceeds, the Turnips should be chopped up with the spade and dug in the bottom of the trench. The following method of cultivating and cropping the ground has been practised here for many years. Where Peas have been grown the ground is ridged for next year's main crop of Potatos, and the Potatos are followed by members of the Brassica family. By this method of rotation the ground is well manured once in three years and limed at the same time, if required. All the crops succeed and the ground is well cultivated.

As time and labour permit all vacant plots of ground should receive attention at this time of the year, especially heavy clay soils. *E. Neal.*

HOME CORRESPONDENCE.

Salvia involucrata var. Bethellii.—In reply to Sir Herbert Maxwell's enquiry (p. 308), I may state that I have grown this very showy, late autumn-flowering Salvia for many years. Than Salvia involucrata Bethellii, under which name it appears in *Nicholson's Dictionary of Gardening*, I know of no other flowering plant which makes such a gorgeous display all through late October, especially when it is grown in large masses. At Bessborough, in southern Ireland, we grew it in large beds in a sunken garden, where its roots often survived the winter, and threw up strong shoots again the following season. When over there in September I noticed some plants which have been in a sheltered position in the herbaceous border for at least five years. Here, in Sussex, the plant did not survive last winter, which was exceptionally severe for this district, at least, so I was told. The propagation of Salvia Bethellii is of the simplest. Cuttings may be dibbled into sandy soil in a cold frame during late September, affording them the same after-treatment as for Calceolarias; strong plants will be available for planting out during the month of May. This Salvia belongs to that very useful class of plants which does not require staking, although it grows to a height of four feet or more. The growths, however, are of a brittle nature, therefore a position sheltered from strong winds should be chosen for it, where its upright habit and bright, rose-coloured flowers and bracts make a warm splash of colour long after most other border flowers are past. *T. E. Tomalin, Stansted Park Gardens, Sussex.*

——Sir Herbert Maxwell, in his interesting notes on page 308, mentions the above plant and asks for information regarding it. It is mentioned in *Nicholson's Dictionary of Gardening* as a garden variety of Salvia involucrata, and well-described under S. i. Bethellii as follows: "Flowers bright, rosy-crimson, in large, whorled spikes terminating the branches; in the bud each whorl is surrounded by a pair of large, coloured bracts, leaves large, cordate-ovate. 1881. A handsome seedling variety, of bold habit. F.M., 464 and G.C. n. s. XV, p. 49, under name of Salvia Bethellii." If the above initials refer to *The Gardeners' Chronicle* probably it is described therein as a new plant. I well remember it being grown as a greenhouse plant in 1883 at Wakehurst Place. The bracts are very conspicuous in the bud stage but fall off as the flowers develop. The plants grown from cuttings rooted in the spring averaged about three feet in height and were always rather late in flowering. *J. Comber.*

——Sir Herbert Maxwell refers to Salvia Bethellii in *Gard. Chron.*, October 16, p. 308, and suggests that the name is a misnomer. This Salvia was raised in 1881 from S. involucrata, a native of Mexico and introduced in 1824. The seedling seems to be larger and stronger than its parent. In South Africa it is a common garden plant growing very freely. In my garden in the Cape Province I did not find it so much liked, nor so effective in the garden as when cut for indoor decoration as other species, such as S. rutilans, S. discolor, S. azurea and S. farinacea. S. patens was rather weedy in habit and did not produce enough flowers open at one time to make a really good mass of brilliant colour. Perhaps it did not like my hungry, sandy soil, mixed with big, round stones. *G. Pollard, N.D. Hort., Edinburgh.*

——In Sir Herbert Maxwell's article in your issue of October 16, the question is raised as to what is Salvia Bethellii. This plant appears to have been mentioned first in *The Gardeners' Chronicle* for January 8, 1881, where a full-page illustration of it is given (see Fig. 163). It is stated there that Salvia Bethellii is without doubt a form of S. involucrata. I quote from the article: "According to Mr. Bethell, now gardener at Sudbury Hall, near Wickham Market, it was raised from seed by him, and cultivated in preference to its parent from its being of better habit, the name having been given in compliment to him by friends with whom he had shared his prize." Apparently the name was retained for many years, as it appears again in the Kew *Hand List of Tender Dicotyledons* for the year 1900 as S. involucrata var. Bethelli. The species itself is also figured in *Bot. Mag.*, 2872. *William Wright Smith, Regius Keeper, Royal Botanic Garden, Edinburgh.*

Hybrids of Gladiolus primulinus.—On p. 276 Messrs. Kelway and Son make the following suggestions: "Messrs. Wallace's statement points either to Mr. Townsend having sent some corms to America, or to there having been a previous collection of the species." Perhaps one of your American correspondents will be able to answer the first suggestion, but as to the second, it would appear to be answered by the note signed "J. G. Baker, Herbarium, Kew," in your issue of August 2, 1890. The note is headed: "Gladiolus primulinus. This is a beautiful new species which has just flowered at Kew for the first time. . . . . The corms were sent by Mr. J. T. Last from the Usagara Mountains in south-east tropical Africa. . . . . The flower is a uniform pale primrose-yellow, without any spots or streaks." *Smilax.*

Two Crops of Plums.—It may be of interest to record that two of my Victoria Plum trees fruited a second time this season. I have to-day gathered about four pounds, the fruits averaging twelve to the pound, and I have ten or twelve pounds on the trees. Is this unusual? One could better have understood if the first crop had failed, but it was quite good. Apples have not been good, the best being Keswick Codlin, James Grieve, Wealthy, Lane's Prince Albert and Warner's King. Of my 150 trees 120 had a grand show of bloom; of the remaining thirty trees, twelve have been planted within three years. Plums and Pears were a moderate crop, but Gooseberries, Currants and Raspberries were very good. *H. E. Mason, Holmacre, Alderley Edge, Cheshire. October* 9.

Fragrant Alpine Plants.—My friend, Mr. Clarence Elliott, exhibits a deplorable lack of memory when he mentions Trifolium alpinum and no other species as an example of a scented alpine plant. Has Mr. Elliott forgotten his visit to Le Lantaret, and the sheets of Daphne striata—both pink and white, perfectly beautiful and enchanting in themselves? They occur in patches of a quarter-of-an-acre and one knows they are there, over the next ridge, some fifty yards away, simply and solely by the entrancing and almost exotic scent which they spread far and wide. This plant is practically impossible to collect and seeds are very scarce, which may account for the fact that Mr. Elliott has a grievance against it. In the same district acres of Narcissus poeticus scent the whole country, and many of the Primulas if gathered in the form of a nosegay are quite as sweet as our native Cowslip—than which there are few sweeter scents. *Maurice Amsler, Eton.*

Cabbage Butterflies.—I feel sure that Mr. Kenneth Smith will accept my sincere apology for having described any statement by him as "a fallacy." My excuse (a poor one, I fear) must be that, having neither myself observed the egg-laying of Apanteles nor met with any precise report by one who had observed it, except that by Fabre, I accepted the description thereof given by that veteran entomologist. Mr. Kenneth Smith maintains that "there is no evidence whatever that the egg (of the butterfly) is parasitised." Would it not be more accurate to say that he rejects as untrustworthy the evidence given in utmost detail by Fabre, extending over thirty-two pages in his *Life of the Caterpillar* (English translation)? If that evidence is condemned as false and misleading, not only is Fabre's personal honesty gravely affected but every other statement in his fascinating *Souvenirs Entomologiques* comes under suspicion. It would oblige me greatly if Mr. Kenneth Smith would kindly refer me to the source of the evidence on which he relies in this matter. *Herbert Maxwell, Monreith.*

SOCIETIES.

GUILDFORD AND DISTRICT GARDENERS'.

The announcement that Mr. Auton would lecture on "The Influence of Gardening" at the first meeting of the winter session drew an attendance that taxed the capacity of the lecture room on the 11th inst. Fears had been expressed that the subject was not likely to draw an audience; but the lecturer said it was the largest gathering, save one, at Reading, that he had addressed.

Mr. Auton defined his subject as "The Refining Influences of Gardening." Casting back across the gulf of time, reference was made to the age-long association of gardening with mankind, and its civilising effects amongst the races of antiquity. Another point was based on the influence, for good or ill, of environment, and here occupation plays an important part. Mr. Auton said: "Most of us spend more time at our work than in any other pursuit, and it must be a colourless type of occupation that fails to leave its mark upon us." Coming down to present-day realities, the argument went on to show that "Horticultural practice depends so essentially on the principles of a large number of the natural sciences so that a gardener must be very dull if he fails to receive a liberal education in fact, if not in name, by the contact with scientific fact and laws" incidental to his calling. Here followed a list of sciences bound up with horticulture and of which a really efficient craftsman should have some knowledge. Thus, in the nature of things, gardening is an education, and exerts its influence through its educational side.

The influence of the beauty of a garden as an educational factor was brought under review: "In our search after mass effects and blazes of colour we are apt to lose sight of the particular in the general, but the botanist in his clever examination into each flower for the purposes of classification finds a new beauty in every curve and every line."

The lecture concluded with a passage on the more spiritual or character-forming effects of horticulture, as witness the progressiveness of the northern races. The ceaseless struggle with Nature to provide for the ever-increasing standard of life calls for watchfulness and effort to combat and overcome the many diverse agencies which would lay waste a crop, serves to promote qualities of endurance and resourcefulness as well as the virtues of faith, hope, patience and sympathy.

A well-sustained discussion followed, and hearty votes of thanks were passed to Mr. Auton and to the President, Mr. W. T. Patrick, J.P.

The next lecture will be on the "Culture of Chrysanthemums," on Monday, November 8, by Mr. J. A. Kirkwood, gardener to the Duke of Sutherland, Sutton Place.

PEEBLES CHRYSANTHEMUM AND VEGETABLE.

Instituted in 1845 and incorporating the local Leek Club, Peebles Chrysanthemum and Vegetable Association is one of the very few horticultural societies in Scotland which have succeeded in maintaining a show so late in the season. The exhibition this year was held recently under the worst possible weather conditions. The Tweed was in flood as the result of the heavy rain which began to fall on the previous evening and a severe gale from the north-west prevailed all day.

The prize schedule contained eighty classes and the entries numbered 573, a slight decline on the previous year's total, but the quality of the exhibits in each section reached a higher standard than has been the case for some years past.

Apples were an outstanding feature, and both in the gardeners' and amateurs' classes competition was very keen. Mr. Charles Wilson, Craigerne, won the special prize for four dishes containing two cooking and two dessert varieties grown outside, with excellent specimens of Lady Sudeley, James Grieve, Warner's King and Peasgood's Nonesuch. He also defeated nine opponents in the class for two dishes, while the fruits of Peasgood's Nonesuch staged by Mr. A. Hislop were easily first in a strong class.

In the vegetable classes, Leeks, Celery, Onions and Potatos were the most meritorious, while the collections deserve special mention if for no other reason than that the amateurs' exhibits were, as a class, equal to those staged by professional gardeners. Chief honours in the former section were won by Mr. D. Hutton with 22½ points, and as an indication of the quality it may be stated that only 3½ points separated the first and fourth prize lots. Mr. Walter Hogarth, The Mount, who was first in the gardeners' class for a collection of vegetables also secured the special prize for most points in the vegetable section.

In the flower section the principal prizewinners in the Chrysanthemum classes were Messrs. R. Nicholson, J. Robson, R. Dodds, Alex. Cruickshanks, R. McAllister and C. Wilson. Exhibits of Michaelmas Daisies were almost as numerous as Chrysanthemums, and the first prize plant in a pot, grown by Mr. J. Thomson, was outstanding for its symmetrical shape and profusion of bloom.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT.

The monthly meeting of this Society was held in the R.H.S. Hall, on Monday, October 11, Mr. T. R. Butler presiding. Five new members were elected, six members withdrew interest amounting to £18 15s. 8d., and one member withdrew £144 4s. 3d. from his deposit account. The Trustees reported that they had invested a further £2,000. The sick pay for the month on the Ordinary side amounted to £82 12s. 10d., and on the State Section to £72 1s. 2d., maternity claims totalled £14 10s. 0d. Grants from the State Section were made to twelve members, amounting to £52 10s. 3d., towards dental and optical treatment, and sixteen other cases were considered. The Secretary produced the Government Auditor's ceritficate, certifying the accounts correct for the State Section for the year 1925.

READING AND DISTRICT GARDENERS'.

In addition to the lecture, flowers and fruits were again a feature at the fortnightly meeting held on Monday, the 11th inst., in the Recreation Club Room, Abbey Hall, when there was a large attendance, presided over by the President, Mr. Frank E. Moring.

The lecture for the evening was on "Strawberries and Raspberries," and the lecturer, Mr. C. Dalby, The Gardens, Greenham Lodge, Newbury, mentioned in his opening remarks that one wondered what could be said to a body of practical gardeners about these fruits, yet Mr. Dalby, by his originality of thought, was able to claim the closest attention of his audience for one-and-a-quarter hours while he described his methods of preparing the soil, the securing of runners, planting, manuring, etc. The varieties of Strawberries recommended were Royal Sovereign and The Duke, and Superlative and Lloyd George Raspberries. Time did not permit of a lengthy discussion.

In the competition for three vases of early-flowering Chrysanthemums, three distinct varieties, there were five entries, and Mr. W. Haines, Priory Road, Caversham, was placed first; Mr. W. Broomfield, The Gardens, Cliffe House, Mapledurham, second; and Mr. W. J. Knight, Beecham Road, Reading, third. In a class for three vases of Michaelmas Daisies, three distinct varieties, five entries, Mr. H. G. Cox, Hamilton Road, Reading, won first prize; Mr. H. Wynn, The Gardens, Luern's House, Goring Heath, second; and Mr. G. Burchell, Church Road, Earley, third.

In the non-competitive section, a First Class Certificate and the congratulations of the

Association were passed to Mr. M. Goddard, Bear Wood Gardens, for three dishes of most excellent fruit, consisting of Lady Palmerston Peaches, Coes' Golden Drop Plums and Golden Russet Apples. An Award of Merit was granted to Mr. E. ILES, Brighton Road, Reading, for several vases of early-flowering Chrysanthemums grown on an allotment. Mr. A. H. FULKES, Elmhurst Gardens, Reading, showed several varieties of Pompon Dahlias; Mr. E. A. BEAUMONT, The Lodge, Earley, several splendid blooms of Chrysanthemums; and Mr. W. HAINES, sprays of a rambler Rose from a tree grown as a standard and which has been in bloom all the summer.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

FRIDAY, OCTOBER 15.—*Committee present:* J. B. Adamson, Esq. (in the chair), Messrs. H. Astley Bell, C. Branch, A. Burns, A. Coningsby, J. Cypher, J. Evans, A. Keeling, E. W. Thompson and H. Arthur (Secretary).

FIRST CLASS CERTIFICATE.

Cypripedium Mildred var. Fantasia (Christopher × bourtonense).—A well-formed flower with a large, round, white, dorsal sepal with spotted base; the petals are broad and the lip of good shape and colour. From S. GRATRIX, Esq.

AWARDS OF MERIT.

Odontoglossum Marathon var. Ruby; O. crispum var. Baron Renfrew; Cattleya Adulosa; Laelio-Cattleya Soulange var. Radiant; L.-C. Shröderae var. Solum; Vanda coerulea Adamson's variety.—From J. B. ADAMSON, Esq.

Cattleya Lamberhurst var. Lemoniana and *Odontoglossum Mirum var. aureum.* From Mrs. P. SMITH.

Odontoglossum crispum Rosalie. From Mrs. S. GRATRIX.

Cypripedium The Sheik. From H. J. BROMILOW, Esq.

Cypripedium Sir Alan Cobham. From S. GRATRIX, Esq.

GROUPS.

J. B. ADAMSON, Esq., Blackpool (gr. Mr. J. Howes), staged a group to which a Gold Medal was awarded.

A Gold Medal was also awarded to S. GRATRIX, Esq., West Point (gr. Mr. C. Branch), for an exhibit of Orchids.

Mrs. BRUCE and Miss WRIGLEY, Bury (gr. Mr. A. Burns), staged a group to which a Silver-gilt Medal was awarded.

A Silver Medal was awarded to Messrs. CYPHER AND SONS, Cheltenham, for a group.

NATIONAL CHRYSANTHEMUM.

THIS Society's Floral Committee met at the Royal Horticultural Hall, on Monday, October 18, when eight new varieties were submitted for judgment. The following awards were made.

FIRST-CLASS CERTIFICATES.

Marjorie Woolman, II. 1 b.—A large exhibition Japanese variety with drooping florets of light chestnut-red colour with old-gold reverse. Shown by Messrs. H. WOOLMAN AND SONS.

Atalanta. II. 1.b.—A somewhat flattish, broad-petalled decorative variety, a trifle long in the neck, but with firm florets which suggest that it would make a good market variety. The colour is silvery pink. Shown by Messrs. CRAGG, HARRISON AND CRAGG.

Comus. II. 1.b.—A clear yellow-coloured, decorative variety with narrow, firm, graceful florets; a variety that should prove very useful for cutting or market. Shown by Messrs. CRAGG, HARRISON AND CRAGG.

ROYAL HORTICULTURAL.

Wisley Trials, 1926.

THE following Awards have been made to the Culinary Peas by the Royal Horticultural Society after trial at Wisley.

AWARDS OF MERIT.

Zenith, sent by Messrs. FIDLER AND SONS; *Duke of York*, sent by Messrs. COOPER-TABER AND CO.; *Admiral Beatty*, sent by Messrs. DOBBIE AND CO., Messrs. LAXTON BROS., Messrs. BARR AND SONS, Messrs. HURST AND SON, Messrs. KELWAY AND SON, Mr. HARRISON, Mr. W. H. SIMPSON and Mr. JOHNSON; *International* (type), sent by Messrs. HURST AND SON; *Alderman*, sent by Messrs. LAXTON BROS. and Mr. JOHNSON; *Melting Marrow*, sent by Messrs. J. CARTER AND CO.

HIGHLY COMMENDED.

Universal, sent by Messrs. RYDER AND CO.; Phenomenon: sent by Mr. JOHNSON and Messrs. ZWAAN AND VAN DER MOLEN; Histonian, sent by Mr. W. J. UNWIN; Magnificent, sent by Mr. JOHNSON; Midseason King, sent by Messrs. ZWAAN AND DE WILJES; Duplex, sent by Messrs. DOBBIE AND CO., Messrs. HURST AND SON., Messrs. LAXTON BROS., and Messrs. NUTTING AND CO.; The Lincoln, sent by Mr. MORSE and Mr. JOHNSON; Canner's Ideal, sent by Messrs. ZWAAN AND VAN DER MOLEN; Dwarf Monarch, sent by Messrs. J. CARTER AND CO.; Onward, sent by Messrs. BARR AND SONS and Messrs. WATKINS AND SIMPSON; Stratagem, sent by Messrs. MORSE; Royal Salute, sent by Messrs. HURST AND SON, A. DICKSON AND SONS and Messrs. HARRISON; Union Jack, sent by Messrs. BARR AND SONS, Messrs. HURST AND SON, Messrs. KELWAY AND SON, Messrs. MORSE, Messrs. W. H. SIMPSON, Messrs. COOPER-TABER AND CO. and Messrs. DOBBIE AND CO.; Lord Chancellor, sent by Messrs. J. CARTER AND CO.; Chancelot, sent by Messrs. W. H. SIMPSON, Messrs. DOBBIE AND CO. and Messrs. ZWAAN AND VAN DER MOLEN (these two are alike); Charnwood Bountiful, sent by Messrs. DEW; Prince Edward, sent by Messrs. COOPER-TABER AND CO.; Northampton Rival, sent by Messrs. YARDE; Goldfinder, sent by Messrs. R. VEITCH AND SON; Ne Plus Ultra, sent by Mr. JOHNSON (these two are alike); Duchess II, sent by Messrs. HURST AND SON.

COMMENDED.

Cropper, sent by Messrs. ZWAAN AND DE WILJES and Messrs. W. H. SIMPSON; Dwarf Defiance, sent by Messrs. JOHNSON; Freedom, sent by Messrs. HURST AND SON; Glory of Devon, sent by Messrs. HURST AND SON and Messrs. COOPER-TABER AND CO.; Early Gem, sent by Mr. JOHNSON; The Clipper, sent by Messrs. KELWAY AND SON; Telegraph re-selected, sent by Messrs. ZWAAN AND VAN DER MOLEN; Model Telegraph, sent by Messrs. J. CARTER AND CO. (these two are alike).

Dahlias for Trial at Wisley.

Emmeline.—A miniature Paeony-flowered variety, heavily flushed with rose on yellow ground.

Kiffle.—A white and scarlet miniature Paeony-flowered variety.

Dot.—A dainty, miniature Paeony-flowered variety of golden colour, lightly flushed with pink.

Wanda.—A bright yellow miniature Paeony-flowered variety with pointed florets of bright yellow colour, and margined with rosy-carmine.

Elatroy.—A bright scarlet miniature Paeony of good shape.

Alice.—A rosy-mauve miniature Paeony with a crimson centre. The above were shown by Messrs. J. BURRELL AND CO.

Coulsdon.—A small Decorative variety with stiff, erect, rolled florets of scarlet and gold colour. This and the following were shown by Messrs. J. CHEAL AND SONS.

Brighton Gem.—A bright pink miniature Paeony-flowered variety.

BRITISH MYCOLOGICAL.

THE thirtieth Annual Meeting and Fungus Foray of the British Mycological Society was held at Hereford, September 27 to October 2. The headquarters for the meeting was the Woolhope Club room at the Public Library. During the foray many references were made to the great influence the Woolhope Club had had on the study of Fungi in the 'sixties, and for a quarter-of-a-century under the influence of Dr. H. Bull; and to the way in which the British Mycological Society might be considered as developing from the forays originated by the Club.

On Monday evening an official welcome was extended by Col. M. J. G. Scobie, C.B., President of the Woolhope Club, and replied to by Dr. G. H. Pethybridge, President of the Mycological Society. The annual meeting of the Society was then held. Dr. E. J. Butler was chosen President for 1927, and Miss Lorrain Smith, Vice-President: Messrs. H. H. Knight and E. W. Mason were elected to the Council. The next autumn foray is to be held in Scotland.

The first day's outing was to Wormesley and Credenhill. The principal finds were Cheilymenia dalmeniensis, Russula lilacea, Flammula gummosa, Marasmius Hudsoni, Psalliota villatica, Inocybe pyriodora, I. conformata, Cortinarius purpurascens, and Eichleriella spinulosa.

In the evening Dr. G. H. Pethybridge gave his presidential address, by kind invitation of Miss Bull, in the rooms where the old Woolhopeans met after their forays. The subject was "Mycology and Plant Pathology." Reference was first made to the lists of Fungi which are the outcome of the forays, and it was suggested that perhaps the time was come when more attention might be paid to the ecology and bionomics of species of all families. Following this the subject of plant pathology was considered particularly in relation to its development in this country. At one time mycology was regarded as of little or no importance in relation to the causation of plant diseases; any Fungi which might occur in connection with diseases were regarded as the result of such disease, not as the cause of it. To-day the pendulum has swung far in the other direction; in the opinion of some, perhaps, too far, because ever increasing attention has been paid to the parasite as the cause of disease, while other factors have tended to suffer somewhat from neglect. Disease is the result of disharmony between the plant and its environment. A parasite, when present, is part of the plant's environment considered in its widest sense. Both the host and parasite are to some extent variable and unstable, and the fluctuating factors of the environment may influence the parasite as well as the host. In spite of this complexity, however, it is still true that the parasite—most frequently a fungus—is often the most important factor in disease production; but a plant pathologist must be something in addition to a mycologist.

A frequent mistake is to confuse the name of a disease with the name of the parasite; confusing, that is, practically effect with cause.

It is generally recognised that the physical factors of the environment are often considerable, and in some cases, of paramount importance in the inception and spread of disease in plants. Again physical climatic factors—temperature, for instance—sometimes play a decisive part in determining whether a specific disease may, or may not, prevail in any particular region. The development of plant pathology until recently in this country has been comparatively slow. In 1877 the possibility of the introduction of the destructive Colorado beetle caused such alarm that our first Act of Parliament dealing with the protection of crops was passed, though no special service was inaugurated for the purposes of the Act. Again, the appearance of the American Gooseberry Mildew, in 1900, and its rapid and destructive spread, was undoubtedly one of the main causes which led, in 1907, to the passing of the Destructive Insects and Pests Act, which amplified and enlarged that passed thirty years previously. A small *ad hoc* inspectorate was then appointed and has since grown to considerable proportions.

The greatest stimulus to the development of plant pathology (as well as to other branches of agricultural and horticultural science) received in this country in recent years, however, has followed from the provision by the State of greatly increased funds through the Development and Road Improvement Funds Act, 1909, and 1910, and subsequently through the Corn Production Acts (Repeal) Act of 1921. The importance of developing research and advisory work in plant pathology, including both diseases and insect pests, was recognised by those charged with the administration of these Acts from the very first; and the present greatly improved position of plant pathology in this country is therefore very largely the result of increased State aid to agriculture, available through the operation of the so-called Development Fund.

The main features of present-day organisation for the study and practice of plant pathology in this country were then detailed.

On Wednesday, Dinmore was visited. Here Helvella ephippium, Hypoxylon argillaceum, Polyporus dryadeus, Tomentellina ferruginosa (new to Britain), Corticium atrovirens, Femsjonia luteo-alba, Poria eupora and P. purpurea were found.

After the day's collecting, the party paid a much-appreciated visit to Messrs. Bulmer's cider works, and were conducted over the factory by the Mayor of Hereford and Dr. Durham (chemist). In the evening, Mr. J. Ramsbottom gave a public lecture on the larger Fungi, illustrated by a large number of coloured lantern slides.

Moccas Old Park was worked on Thursday and proved the most suitable collecting ground. In the pastures numerous species of Hygrophorus including H. intermedius, H. Reai, H. laetus, H. calpytraeformis, and a new species (near, to H. squamulifer) were found, also Microglossum viride and Pluteus salicinus. A surprising number of Clavarias were flourishing under the Bracken—usually a most unprofitable collecting ground; they included Clavaria Kunzei, C. Krombholtzii, C. amethystina and C. gigaspora (second record) The Myxomycete Lycogala conicum was recorded for the first time for this country.

Thursday evening was occupied by a dinner given by the Woolhope Club to the Society in the famous Green Dragon. It was the celebration of the seventy-fifth anniversary of the Club. The old menu card of 1877 (see *Gard. Chron.*, October 13, 1877, Fig. 90) was used.

Haugh Wood and Holme Lacey were visited on Friday but were disappointing: Lactarius controversus, Omphalia atropunctata, Boletus nigrescens, Canoderma lucidum, Corticium fastidiosum and Kuehneola albida were the principal finds.

On the last evening, the President described and exhibited a new Potato tuber rot. The exhibit consisted of Potato tubers from the Isles of Scilly attacked by the fungus Rosellinia necatrix. When kept moist such tubers rapidly decayed, but under dry conditions decay was slower and resembled a dry rot. The fungus appears to enter through the lenticels, and at first forms circular depressions around them, the lenticel itself remaining as a slightly elevated pimple in the centre of each pit. As the depressions enlarge they coalesce, and the skin of the tuber may become wrinkled as in the dry rot caused by Fusarium caeruleum. As the tubers decay cavities may arise in the interior in which copious white mycelial development occurs. In some cases white, rhizomorphic strands were found running from the decayed part of the tuber into the still sound part. It is interesting to note that this fungus, which is already known as a parasite on the roots of fruit trees and vines, has recently been found also in the Isles of Scilly—destroying Narcissus bulbs.

After votes of thanks had been accorded to those who had assisted in making the foray a success, Mr. Carleton Rea commented on the most interesting finds of the week.

Obituary.

Richard Vincent, Junr.—The world of horticulture, and particularly the Dahlia fraternity, will lament the death of "The Grand Old Man of the Dahlia," as he was called in America, for although up to the end "Richard Vincent, Junr.," was his customary signature, he was a veteran who had passed the eighty-second milestone of life. Just a month before his death he was the hale and hearty guest of honour at a big banquet given by the combined forces of the Philadelphia Florists' Club and the American Dahlia Society, on which occasion. to the accompaniment of much eulogistic oratory, he was presented with a handsome gold-banded walking stick. Mr. Grakelow, in making the presentation, said: "May you lean upon this cane as we have leaned upon you; may it each time you get up in the morning say 'Let's go,' and one of these days soon may it say 'Let's go back to Philadelphia.' When you get back here there will be a group at the station to say 'God bless you for coming back'." Those few words expressed the feelings of the wide circle of American Dahlia growers toward their grand old man, and although their friend has not lived to "go back" to meet them, there will be many who are glad they contributed to that walking stick instead of waiting to contribute to a wreath. Richard Vincent was a native of Northamptonshire, and although he had long made America his adopted country and had built up the largest Dahlia business in America, he had never ceased to cherish an affection for England, which he likened to a roving son's love for his mother. In 1925, Mr. Vincent visited England and was greatly interested in the Chelsea show. During his stay in London he was entertained to dinner by members of the National Dahlia Society, when a honorary life membership was conferred upon him. He also visited the Continent that year. Death occurred on October 14 at his home, Whitemarsh, Maryland, the funeral taking place on October 16, amid remarkable manifestations of affection.

William Spinks.—We regret to learn of the death of the veteran horticulturist, Mr. William Spinks, who passed away on Monday, the 25th inst., at Nursery Cottage, Solihull. Born on January 10, 1844, Mr. Spinks commenced his horticultural career by being apprenticed for five years to a nurseryman in the eastern counties. Here he had a strenuous and somewhat rough experience but obtained a thorough grounding in nursery work. His next position was that of student in the Royal Horticultural Society's Gardens at Chiswick, where he entered for three examinations and obtained the coveted Chiswick Certificate. From Chiswick he obtained an appointment at Chantilly, under the Duc d'Aumale, and he remained in France during the period of the Franco-German war. After the war, and with a vast experience, he returned to Chiswick to become general foreman under Mr. A. F. Barron, a post he occupied for two years before becoming superintendent of Ashton Lower Grounds under Mr. H. G. Quilter; these grounds were then a popular resort of the Birmingham public, and Mr. Spinks made them very beautiful at all seasons. Eventually the fickle public turned to other attractions, and so Mr. Spinks had to find another position. At that time the Royal Nurseries, Edgbaston (Felton and Sons)were offered for sale and taken over by a private gentleman who appointed Mr. Spinks as general manager. The nurseries were put in order, and floral work was made a feature, but eight years later the proprietor's health gave way, and Messrs. Hewitt and Co., Solihull, took over the establishment with Mr. Spinks as manager. It is in this position that Mr. Spinks became well-known in the Midlands and elsewhere, for he possessed a fund of information had a commanding and striking personality, and was always delighted to have a chat with an old friend. As a florist he held a foremost position among floral artists, while as a member of the nursery trade he was widely and highly respected. In recent years his fine figure became bent by the weight of years, and about three years ago failing health compelled him to relinquish the duties he had delighted in for so many years. To his widow and family the deepest sympathy will be extended by thousands of friends. The funeral service was held at Solihull Parish Church on Thursday last.

Thomas H. Windle.— By the death of Mr. T. H. Windle, which occurred on Saturday, the 23rd inst, the Covent Garden flower industry has lost one of its most highly respected members. For many years Mr. T. H. Windle was with Messrs. Thomas Rochford and Sons and acted as their salesman in Covent Garden Flower Market, where his tall figure arrested attention, and his charming personality endeared him alike to the buyers and to his fellow salesmen. Several years ago Mr. Windle set up business as a salesman on his own account and with considerable success. As a member of the governing body of the British Florists' Federation, Mr. Windle was at all times ready to work on behalf of the interests of the industry he adorned, and many will remember the address he gave on "Flower Imports" at a recent annual meeting of the B.F.F. The funeral took place at Cheshunt Cemetery, on Wednesday last, amid abundant tokens of affection and esteem. To the widow, who has so ably assisted her husband in his business, we offer our deepest sympathy.

ANSWERS TO CORRESPONDENTS.

Construction of Hard Tennis Court.—*H. W. J.* Shale hard courts are more popular than any other type, and hundreds of such courts have been laid all over the country. The following specification is the one adopted in the construction of sixty courts in the Manchester Public Parks: "The ground to be well-drained with three-inch land-drain pipes set out in rows fifteen feet apart. The whole site to be covered with a layer of hard clinkers and furnace cinders to a depth of four inches and thoroughly consolidated. clinkers to be covered with three inches of suitable red shale—two-thirds next to cinders to be half-inch material, the remainder as topping to have passed through a quarter-inch screen. The first layer of shale must be well-rolled and made thoroughly firm before the topping is laid over it, and then the whole again rolled until the surface becomes hard, smooth, and of the requisite gradient." While the surface will, in all probability, retain its porosity, it may happen in time that this property may be lost, and it is therefore well to prepare for this by allowing a fall of one in one hundred from the centre to the outer edges of the courts. The shale used at Manchester is obtained from a colliery spoil heap, where the furnace cinders have been twice burnt, and all the carbon eliminated, leaving a residue of silicate of alumina. Where courts are made of this material it is essential that a hydrant and hosepipe should be close by in order that the courts may be sprayed during dry weather to preserve a hard surface and lay the dust.

Fungus on Celery Leaves.—*Miss J. S.* The Celery leaves are attacked by the fungus, Septoria Petroselina var. Apii, and although it does not become serious until September, it is present during the growing period of the plants. Three sprayings with Bordeaux mixture in June, July and August will protect the plants. The disease may be carried on the seeds, therefore these should be sterilised with hydrogen peroxide; seedling plants should be dipped in Bordeaux mixture at the time of transplanting.

Names of Fruit.—*F. T. W.* The Grapes were decayed when they reached us, therefore it was impossible to name the varieties.

Communications Received.—W. P. C.—F. P. B.—M. S.—H. H.—E. F. B.—G. H. H.—C. E. P.—H. B. L.—V. U.—C. I.—H. H. C.—W. S.—J. T. B.—J. J. S.—H. U. T.—A. G.—A. H. McL.—G. L.—J. S E. A. S.—W. G. H.

MARKETS.

COVENT GARDEN, Tuesday, October 26th, 1926.

Plants in Pots, etc.: Average Wholesale Prices.

(All 48's except where otherwise stated).

	s. d. s. d.
Adiantum cuneatum per doz. ...	10 0-12 0
—elegans ...	12 0-15 0
Aralia Sieboldii	9 0-10 0
Araucarias, per doz.	30 0 42 0
Asparagus plumosus ...	12 0-18 0
—Sprengeri ...	12 0-18 0
Aspidistra, green	36 0-60 0
Asplenium, doz.	12 0-18 0
—32's	24 0-30 0
—nidus ...	12 0-15 0
Cacti, per tray —12's, 15's ...	5 0- 7 0
Cyclamens, 48's, per doz. ...	18 0-21 0
Chrysanthemums, in variety, 48's, per doz. ...	18 0-30 0
Crotons, doz. ...	30 0-45 0
Cyrtomium ...	10 0-25 0
Erica gracilis, 48's, per doz.	24 0-33 0
— 60's, per doz.	9 0-12 0
—nivalis, 48's per doz. ...	21 0-36 0
—60's „	12 0-15 0
—72's „	8 0—9 0
Hydrangeas, white, 48's, per doz.	24 0-70 0
Lilium speciosum rubrum, 32's, 48's each	2 6--3 6
Nephrolepis in variety ...	12 0-18 0
—32's	24 0-36 0
Palms, Kentia	30 0-48 0
—60's	15 0-18 0
Pteris, in variety	10 0-15 0
—large, 60's ...	5 0- 6 0
—small ...	4 0- 5 0
—72's, per tray of 15's ...	2 6- 3 0
Solanums, 48's, per doz. ...	12 0-18 0
—60's, per doz.	9 0—10 0

Cut Flowers, etc.: Average Wholesale Prices.

	s. d. s. d.
Adiantum decorum, doz. bun.	10 0-12 0
cuneatum, per doz. bun. ...	8 0-10 0
Asparagus plumosus per bun., long trails, 6's ...	2 6—3 6
med. sprays	1 6--2 6
short ...	0 9--1 3
—Sprengeri, bun. long sprays	1 6—2 0
med. „	1 0—1 6
short „	0 4—1 0
Bouvardia, white per doz. bun.	12 0-15 0
Camellias, 12's, 18's per box ...	3 0--3 6
Carnations, per doz. blooms...	4 0—6 0
Chrysanthemums, white, per doz.	4 0—6 0
—bronze ...	3 0—6 0
—white, per doz. bun. ...	18 0-30 0
—bronze, per doz. bun. ...	18 0-24 0
—yellow, per doz. blooms ...	3 0—6 0
—yellow, per doz. bun. ...	15 0-21 0
—pink, per doz. blooms ...	4 0—6 0
—pink, per doz. bun. ...	15 0-18 0
—specimens, per doz. blooms...	15 0-21 0
Cornflower, blue, per doz. bun.	2 6 3 6
Croton leaves, per doz. ...	1 9—2 6
Fern, French, per doz. bun.	10 0-12 0
French Flowers—	
—Acacia (Mimosa), per doz. bun.	12 0-15 0
—Eucalyptus, per pad	7 0—8 0
—Ruscus, green, per pad ...	6 0—8 0
—Myrtle, green, per doz. bun.	1 6—2 0
—Solanum berries, 300's, per pad	8 0—9 0
French Flowers—	
—Violets, Parma, per bun. ...	2 6—3 0
Gardenias, 12's, 18's per box .	5 0—6 0
Heather, white, per doz. bun.	6 0—9 0
—pink, per doz. bun.... ...	6 0—8 0
Honesty, per doz. bun.... ...	15 0-18 0
Lilium auratum, per doz. blooms ...	10 0-12 0
—longiflorum long, per doz.	4 6—5 6
—speciosum rubrum, long, per doz. blooms ...	3 6—4 0
— short, doz. blooms ...	2 6—3 0
Lily-of-the-Valley, per doz. bun.	18 0-30 0
Orchids, per doz.	
—Cattleyas ...	24 0-36 0
—Cypripediums per doz. blooms ...	5 0—6 0
Physalis (Cape Gooseberry,) per doz. bun.	15 0-21 0
Richardias (Arums), per doz. blooms	6 0—8 0
Roses, per doz. blooms—	
—Madame Abel Chatenay ...	3 0—4 0
—Molly Sharman Crawford	3 0—4 6
—Richmond ...	3 6—4 6
—Golden Ophelia	4 0—5 0
—Sunburst ...	3 6—4 6
—Mrs. Aaron Ward ...	2 0—2 6
—Madame Butterfly	4 0—6 0
Smilax, per doz. trails ...	3 0—4 0
Statice sinuata, per doz. bun.	10 0-12 0
Stephanotis, per 72 pips ...	— 4 6
Violets... ...	2 6—4 0

Remarks.—The continued cold weather has resulted in a general shortage in this department and a great increase in prices for all grades of flowers, supplies being insufficient for requirements. Spray Chrysanthemums, both white and coloured, have increased considerably in price, more especially the medium grades. All consignments of Carnations and Roses are soon cleared; the latter flowers have increased most in value during the past two or three days. Lilium longiflorum is a trifle more plentiful. The quantities of Richardias (Arums) are much below requirements. Camellias and Gardenias are soon cleared at increased prices. Single Violets, which have been plentiful, are decreasing in quantity from home-growers. Physalis is getting very poor in quality, but there is a fairly good supply of Honesty. Supplies of flowers from France are on the increase. Parma Violets are arriving in much better condition and supplies are more plentiful; the newest subjects from this quarter are a few baskets of yellow Marguerites and Carnations. More business is being done in this department, Ericas, Chrysanthemums and Solanums receiving most attention. A few more Cinerarias and Cyclamens have been on sale during the past week. Small Solanums in sixty-pots form a very saleable line. Ericas in sixties and thumbs pots also meet with a ready demand. Aspleniums are the scarcest amongst Ferns just now.

Fruit: Average Wholesale Prices.

	s. d. s. d.
Apples, American—	
—York Imperial per barrel ...	20 0-25 0
—Jonathan, per barrel... ...	16 0-20 0
—Grime's Golden ...	12 0-16 0
—British Columbian Jonathan	10 0-14 0
Apples, English—	
—Worcester Pearmain, cases... ...	16 0-18 0
—Chas Ross, ½-sieve ...	10 0-12 0
—Lord Derby	6 0-10 0
—Newton Wonder ...	8 0-12 0
per bushel ...	6 0-10 0
—Bramley ...	8 0-15 0
—Lane's Prince Albert, bush.	6 0-12 0
—Tyrolean ...	5 0-10 0
—Californian Newtown Pippins	7 6-10 0
—Jonathan ...	10 0-13 0
—American Cox's Orange Pippin, per case ...	18 0 20 0
Nova Scotia	14 0-18 0
—King, per barrel	20 0-24 0
—Ribston Pippin	18 0-22 0
—Blenheim Pippin	18 0-24 0
—Ontario ...	14 0-16 0
—Others ...	14 0-18 0
Apples, Italian, per box ...	7 0-10 0
Bananas ...	11 0-22 6
Blackberries, lb.	0 2½-0 3½
Chestnuts, Redon, per bag	25 0-28 0
Cob nuts, per lb.	0 7--0 7½
Figs, forced, per doz.	2 0—8 0
Figs, French, per box	0 6—1 3
—Italian, per box	0 9—1 3
Grape Fruit—	
—Blue Goose ...	30 0-35 0
—British Honduras ...	22 0-25 0
—Isle of Pines...	22 6-25 0
Grapes, English—	
—Canon Hall...	4 0--6 0
—Gros Colmar	1 9--3 0
—Alicante ...	1 0--3 0
—Muscat ...	4 0--7 0
Grapes Belgian	1 0—2 6
Lemons, Messina, per case ...	14 0-20 0
—Naples ...	18 0-20 0
Melons—	
Oranges—	
—Californian ...	20 0-25 0
Peaches, Belgian, per doz. ...	10 0-24 0
Pears, English—	
—Conference, ½-sieve ...	6 0- 8 0
—Comice ...	10 0-15 0
—Specials, per doz.	4 0-15 0
Pears—	
—Californian Comice—	
½-cases ...	11 0-14 0
cases ...	16 0-20 0
—Winter Nelis, ½-case ...	12 0-14 0
—Beurre D'Anjou	16 0-20 0
—Tyrol	4 0--5 0
—ordinary ...	3 0--4 0
Pines	2 0—4 0
Walnuts, Grenoble... bag	8 6-11 0

Vegetables: Average Wholesale Prices.

	s. d. s. d.
Beans—	
—Forced ...	1 0—2 0
—French, per crate... ...	4 0—5 0
Beets, per cwt.	5 0--6 0
Cabbage, per doz.	2 0--3 0
Carrots, per ½ bag ...	4 6--5 6
Cauliflowers, per doz.	3 0--6 0
Celery, fans ...	2 0—2 6
Chicory Belgian	0 4—0 5
Cucumbers, per doz.	5 0--7 0
—Flats ...	16 0-18 0
French Batavia	2 0—3 0
French Endive, per doz. ...	2 6—3 0
Lettuce, round, per doz. ...	1 6--2 6
Mint, forced, per doz. ...	4 0—3 0
Mushrooms	
—cups	3 0—4 0
—Broilers ...	2 0—2 6
—Field ...	1 0—1 6
Onions—	
Valencia ...	9 6-10 6
Parsnips, per cwt. ...	5 6--6 6
Potatos—	
—King Edward ton	£8, £10
—others ton,	£5, £8
Sprouts, Brussels per ½ bag ...	3 0—6 0
Tomatos—	
—English, pink new crop ...	6 0—8 0
—pink and white, new crop ...	6 0—8 0
—pink, old crop	2 6—3 6
—pink and white, old crop ...	2 6—8 0
—Guernsey ...	3 0—4 6
—Jersey ...	3 6—5 0
Turnips, per cwt.	6 0--7 0

Remarks.—Trade is not particularly active but is, perhaps, as good as may be expected under general conditions. The Apple market is over supplied with fruits, mainly from Canada and the United States, and the selling level is comparatively low. A few English Apples are still arriving. Large cookers, such as Bramley's Seedling, Lane's Prince Albert and Newton Wonder, are meeting a good reception from buyers. Fruits of secondary grade, however, are a poor trade. English Grapes are selling fairly well considering the competition with Belgian Grapes. There seems a better tone in the demand for English Pears, Doyenné du Comice in particular. Up to now Californian Doyenné du Comice has been the most popular variety with the trade, mainly owing to the low selling prices as compared with the English fruits of that variety. Cob Nuts are scarce and more costly. There have been very few English Walnuts; supplies of these Nuts are mostly from Grenoble, and these are now advancing in value. Chestnuts are getting more plentiful and are quoted cheaper. The Tomato trade remains steady at last week's prices. Cucumbers are slightly firmer in value. Forced Beans from Guernsey are now a much better trade after having had a rather bad time in competition with outdoor Beans. The weekly shipment of Beans from Madeira has not arrived this week owing to unfavourable weather in the island. Business in Mushrooms continues to be very steady, considering the increase in quantities during the past fortnight. Cauliflowers are an improved business. Green vegetables are a fair trade with very little fluctuation in prices. The Potato trade is moderately good.

GLASGOW.

A slight improvement in prices was experienced in the past week's trading in the cut flower market. Except in the case of Lilium longiflorum (Harrisii) which advanced to 5/- per bunch, the upward movements were by no means sharp, but the general tone was better than it has been for many weeks. Owing to the difficulty experienced by growers in providing heat during the existing cold spell, supplies of Chrysanthemums were rather short, a condition of things which has not only influenced values but kept a number of varieties late in flowering. Thorpe (white and lemon), ranged from 1/3 to 1/9 for 6's; Rose Maid, Cranford Yellow and Jean Pattison, 1/- to 1/3; Lo Pactole, 10d. to 1/2; Freedom, 10d. to 1/-; Almirante and Pink Perfection, 9d. to 1/-; Sanctity and Dolores, 8d. to 10d.; Framfield White, 6d. to 8d.; and Betty Spark (sprays), 5d. to 6d. Carnations were dearer at 3/6 to 4/6 per dozen, and 3/9 to 4/6 was paid for Roses of varied colours.

Business in the fruit section was slow for the time of the year, and the effect of the cold weather is apparent in the smaller consumption of Oranges and Grape Fruits. American Apples continued plentiful and their prices remain moderate. Californian Newton Pippin was only worth 9/6 per case, while prices for Jonathan, McIntosh Red, and Wealthy, ranged from 9/6 to 14/-, according to grade. Extra fancy qualities of Delicious made 15/- to 16/- for the best counts, and others averaged 13/6; Beurré d'Anjou Pears sold at 18/- to 22/- per case, and Blocks Winter Nelis at 15/- per half-case. South African Oranges were worth 24/- to 28/-; Jamaica Oranges (Blue Mountain), 20/- to 22/-; and Sunkist, brand, 26/- to 31/-. The value of Grape Fruits declined to 18/- and 19/-. Grapes were steady at 3/6 to 3/9 for Kippen Gros Colmar; and 1/9 to 2/6 for English (Joseph Rochford). Dates were 1d. per carton cheaper, and Nuts remained at previous quotations. Tripoli Onions rose 2/- per case to 10/6 to 12/6 for 5 and 6 counts. The value of Scotch Tomatos fluctuated between 7d. and 9d. per lb., and green fruit were saleable at 1/- to 1/6 per chip. Prices of Cucumbers ranged from 2/- to 5/- per dozen, and French Beans from 1/6 to 4/- per cane, but there was no demand for Lettuces, and Cauliflowers were not obtainable.

TRADE NOTE.

The excellently well-arranged revised catalogue of Orchids offered by Messrs. Charlesworth and Co., Ltd., Haywards Heath, extending over one hundred pages and enumerating upwards of 2,100 subjects, serves to give an idea of the extent of the firm's wonderful collection, and will also be of great service to all Orchid growers. In the revision a number of the older hybrids are omitted, but all worthy to rank with the high standard of the bulk of the newer hybrids enumerated are retained. Special notes on the culture of each section are given at the head of each genus, an enumeration of the species preceding the list of hybrids. At the end of the catalogue an extensive priced list of pretty and rare species of botanical interest is given, and it is a pleasure to see that the firm which has done such splendid work in the production of superb hybrids retain their old interest in the species.

GARDENING APPOINTMENTS.

Mr. J. Hastie, for the past two-and-a-half years foreman at Dunglass, and previously foreman at Dundas Castle, as gardener to Frank Usher, Esq., Dunglass House, Cockburnspath, Berwickshire. (Thanks for 2/- for R.G.O.F. Box.—Eds.).

Mr. A. Hawkins, previously gardener to R. Jowitt, Esq., Chilland, Winchester, as gardener to Mrs. Alan Lubbock, Adhurst, St. Mary, Petersfield, Hampshire. (Thanks for 2/- for R.G.O.F. Box.—Eds.).

Mr. Charles Lickman, for the past eight years gardener to O. F. Mosley, Esq., Leasingham Manor, Sleaford as gardener to Mrs. Watts-Russell, Biggin Hall, Oundle, near Peterborough. (Thanks for 2/- for R.G.O.F. Box.—Eds.).

Mr. T. Lindores, for the past two-and-a-half years general foreman at the Royal Gardens, Sandringham, and previously foreman at Eastnor Castle Gardens, Ledbury, as gardener to the Rt. Hon. Lord Dalmeny, Mentmore, Leighton Buzzard. (Thanks for 3/- for R.G.O.F. Box.—Eds.)

CATALOGUES RECEIVED.

Clibrans, Ltd., Altrincham.—Herbaceous and alpine plants; trees, shrubs and climbers.

John E. Knight and Son, Rose and Plant Farm, Wolverhampton.—Roses, fruit trees and plants.

Hugh M. Kershaw, Ltd., Keighley.—All-weather tennis courts.

Laxton Brothers, Bedford.—New fruits.

J. Jefferies and Son, Ltd., Cirencester.—Trees and shrubs.

H. J. Jones, Ryecroft Nurseries, Lewisham.—Chrysanthemums, Michaelmas Daisies, etc.

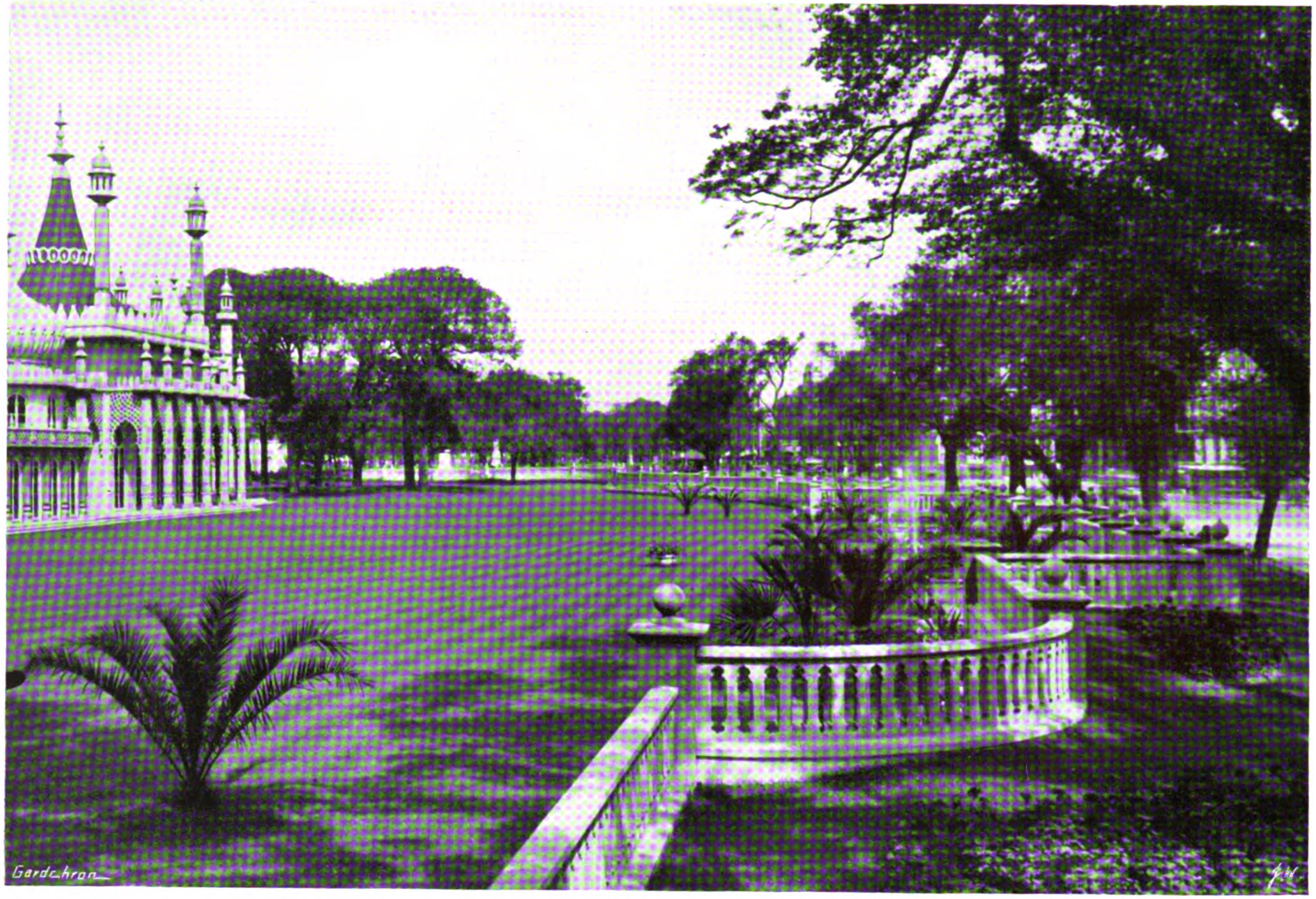
Perry's Hardy Plant Farm, Enfield, Middlesex.—Alpines and perennials for autumn planting; Empire-grown Bulbs.

W. Watson and Sons, Ltd., Killiney Nurseries, Killiney Co. Dublin.—Fruit trees; Roses; hedge plants.

R. C. Notcutt, Woodbridge, Suffolk.—Alpine and herbaceous plants.

W. Fell and Co., Hexham.—Forest trees, Roses, fruit trees, etc.

G. Beckwith and Son, Hoddesdon, Herts.—New Roses.



THE DOME GARDENS, BRIGHTON.

THE
Gardeners' Chronicle

No. 2080.—*SATURDAY, NOVEMBER* 6, 1926.

CONTENTS.

Aberdeen, notes from 373
Alpine garden—
  Silene maritima ... 366
Aster, a new 363
Books, notices of—
  The Flora of South Africa 372
Bramble, the Nutka Bay 371
British Horticultural Association ... 363
Bulb garden—
  Brunsvigia Josephinae 369
Cacti, the Roland-Gosselin 362
Chrysanthemums, old-time 376
Diamond wedding of Mr. and Mrs. J. Harrison 363
Fires caused by railway and other engines ... 370
Florists' flowers—
  Dahlias 367
Fruit crops, remarks on the condition of the 375
Fruit garden—
  Apples raised by the late Mr. Charles Ross 375
Fruit Register—
  Pear Sir Harry Veitch 375
Fuel for glasshouses... 361
"Gardeners' Chronicle" seventy-five years ago 363
Hardy flower border—
  Boltonia asteroides 366
  Helenium Crimson Beauty 366
  Rudbeckia speciosa 366
  Salvia uliginosa ... 366
  Teucrium Scorodonia crispum variegatum 366
Haverholme Priory ... 361
Horticultural and Agricultural Organisers' Conferences ... 362
Horticulture in the Island of Guernsey 368
Indoor plants—
  Jacaranda mimosaefolia 372
  Leonotis Leonurus... 372
  Ruellia macrantha... 372
Kew, notes from ... 374
Obituary—
  Smet, Arthur de ... 379
Orchid notes and gleanings—
  Dendrobium Dearei and D. atroviolaceum 372
Parks and gardens, public 374
Pear trees of Vitry, the 361
Pears, an "eye" rot of 373
Plants new or noteworthy—
  Œnothera trichocalyx 366
Primula farinosa ... 376
Rose garden—
  Polyantha Roses ... 367
Societies—
  Glasgow and W. of Scotland Hort. ... 379
  Holland (Lincs.) Potato Show ... 378
  Imperial Fruit Show 376
  Royal Caledonian ... 379
  Royal Horticultural 377
The Dell, Englefield Green 374
Trees and Shrubs—
  Shrubbery Hypericums 372
  Transplanting evergreen trees ... 371
Watkins, Mr. Alfred ... 362
Weather glass, How to predict the weather by the 370
Week's work, the ... 364

ILLUSTRATIONS.

Apple Worcester Pearmain attacked by "eye" rot ... 373
Guernsey, horticulture in the Island of, 365, 368, 369
Ledum glandulosum and Pinus contorta in Alaska ... 370
Œnothera trichocalyx 363
Pear Sir Harry Veitch 375
Rose Coral Cluster 367
Rubus nutkanus in Alaska 371
Watkins, Mr. Alfred, from a painting by Mr. T. M. Ronaldson 362

SUPPLEMENT PLATE.
The Dome Gardens, Brighton.

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last fifty years at Greenwich, 44.0.

ACTUAL TEMPERATURE—

The Gardeners' Chronicle Office, 5, Tavistock Street, Covent Garden, London, Wednesday, November 3, 10 a.m. Bar. 29.9. Temp. 47°. Weather, Dull.

The Pear Trees of Vitry. AN interesting account has been published in the *Bulletin* of the Paris National Natural History Museum of the vicissitudes of the trees which once formed the orchard of the Carthusian monastery near Paris. According to Poiteau (the writer of the *Cours d'Horticulture*, 1853), it was about 1650 that a Carthusian monk named Frère Alexis took charge of the Carthusian orchard at Vitry, near Paris. Thanks to his skill and enthusiasm, and his excellent choice of the best varieties of fruit, the orchard became famous, and increased in reputation until the outbreak of the Revolution in 1789. The Carthusian order was then suppressed, and the orchard in danger of being completely destroyed, had not André Thouin, the far-sighted and public-spirited gardener of the Jardin du Roi, obtained permission to preserve two specimens of each species and variety. Hervy, who had been in charge of the orchard, himself supervised the removal and labelling of the trees, which thus became the nucleus of the collection appertaining to the Natural History Museum, a collection which was subsequently greatly enriched, partly by acquisitions from famous gardens, partly by the production of new varieties. When the disturbance caused by the Revolution was over, Chaptal, then Minister of the Interior, who was a very enlightened and scientific man, wished to re-establish the Carthusian orchard on the spot it originally occupied. Hervy's son was given charge of the work, and seven hundred trees were planted in the north portion of the Chestnut Avenue which united the Luxembourg and the Observatory, and which took the name of *Pépinière*. However, the "Pépinière du Luxembourg" was not destined to survive, the spot being later occupied by buildings. The trees which Thouin had obtained from the original orchard, planted at first in groups in an extension of the Botanic Garden, near the Seine, were transplanted in 1824 to the enclosure occupied by "Economic Plants"; in 1840 they were again transplanted and stood in part along the Rue de Seine (now known as the Rue Cuvier), in part on a piece of land by the side of the Rue Buffon now occupied by the Fruticetum. In 1888, M. Maxime Cornu, Professeur de Culture of the Museum, requested the French National Horticultural Society to nominate a commission to go and see that part of the collection of Pears which bordered the Rue Cuvier, from whence they were to be removed to make room for an extension of the menagerie. Unfortunately, by this time a number of the trees had perished, some in consequence of the exceptionally severe weather in the winter of 1879-80, and others by reason of their having been planted too closely. However, the commission (which was composed of the most eminent Parisian pomologists) found a great many of the trees in good condition, in spite of the very unfavourable conditions to which they had been subjected, and were struck by the fact that the greater number of the trees were exceedingly rare—not, indeed, to be found in any existing nursery. Of the one-hundred-and-two varieties shown in the Carthusian catalogue of 1775, eighty-seven remained. In anticipation of their removal, Maxime Cornu had the trees grafted on young stocks planted in the Museum nursery; but they were still terribly crowded, and the soil in which they were growing was already exhausted by successive plantings. There they have remained ever since, and the ground on which they have been standing is shortly to be occupied by the new seed laboratory. At last, however, an opportunity has been found to provide these ancient and interesting trees with the conditions most favourable to their growth. M. D. Bois, the present occupier of the Chair of Cultivation of the Natural History Museum, with the aid of the head gardener of the Museum and others, has been able to graft all the trees in the ancient fruit collection on to young stocks, and they are now accommodated in the Jardin de Jussieu, Chèvreloup, Versailles, a tract of land lately made over to the Museum. The collection comprises 325 specimens, each variety being represented by three specimens. Now that there is plenty of room for development, efforts will be made to increase the collection by both old and new varieties, and thus make it of the greatest value to students of pomology.

Our Supplement Plate.—With the present issue we give our readers a supplementary illustration of the gardens around the famous Dome and Pavilion at Brighton. Great improvement has been made in these gardens in recent years by Mr. B. H. Maclaren, the Parks Superintendent, who has also done splendid work in the other parks and open spaces of Brighton. It is in the Dome and Corn Exchange that the Brighton Chrysanthemum show will be held on Wednesday and Thursday, the 10th and 11th inst.

Fuel for Glasshouses.—The Secretary for Mines, Lt.-Col. Lane-Fox, received a deputation representing the Council of the Royal Horticultural Society, and consisting of Lord Lambourne, the President; Sir William Lawrence, the Treasurer; Dr. A. W. Hill, of the Royal Botanic Gardens, Kew; Mr. George Monro, Lt.-Col. Stephenson R. Clarke, the Hon. H. D. McLaren and Mr. F. R. Durham, the Secretary, at Dean Stanley Street, on Tuesday, November 2, to discuss the question of fuel supplies for glasshouses. Lord Lambourne introduced the deputation and pointed out the great importance of the plant industry, both in connection with food supplies and employment. He reminded Col. Lane-Fox that during the war two-thirds ration of fuel was provided for consumption in glasshouses in England. Sir William Lawrence pointed out that hybrid and rare plants, if lost, could not be replaced, and it would be a calamity if the horticultural trade came into the hands of foreign competitors. Dr. Hill pointed out that the Government had taken into consideration the national importance of the gardens at Kew, and the value of the collection of plants, and asked that private collections should be also taken into consideration. Mr. Monro spoke of the position of the trade, and of the importance to the food supply of the country of raising young vegetable plants in the autumn and winter. Lt.-Col. Lane-Fox received the deputation sympathetically and stated that the shortage of fuel was such that he could not hold out hope of a sufficient supply of home-produced fuel to keep glass-houses heated, but he would look into the matter and communicate with the Royal Horticultural Society as to the possibility of growers being able to obtain supplies from other sources.

Haverholme Priory.—It is greatly to be regretted that Haverholme Priory, near Sleaford, is shortly to be demolished and will cease to exist as an estate. It was for many years the country seat of the Earls of Winchilsea and Nottingham, and the gardens and park were justly celebrated for their beauty and interest. In Evedon Wood, on the outskirts of the park, was a famous heronry, one of the few remaining in the country, and the beautifully wooded park itself sheltered a fine herd of deer. Much of the timber surrounding the mansion is to be felled, part of the grounds having been sold to a timber merchant. It may be recalled that Haverholme finds a place in the Domesday Book. It was at one time a monastery, and the monks drained and tilled the surrounding lands. The Winchilsea family has held the property since the eighteenth century.

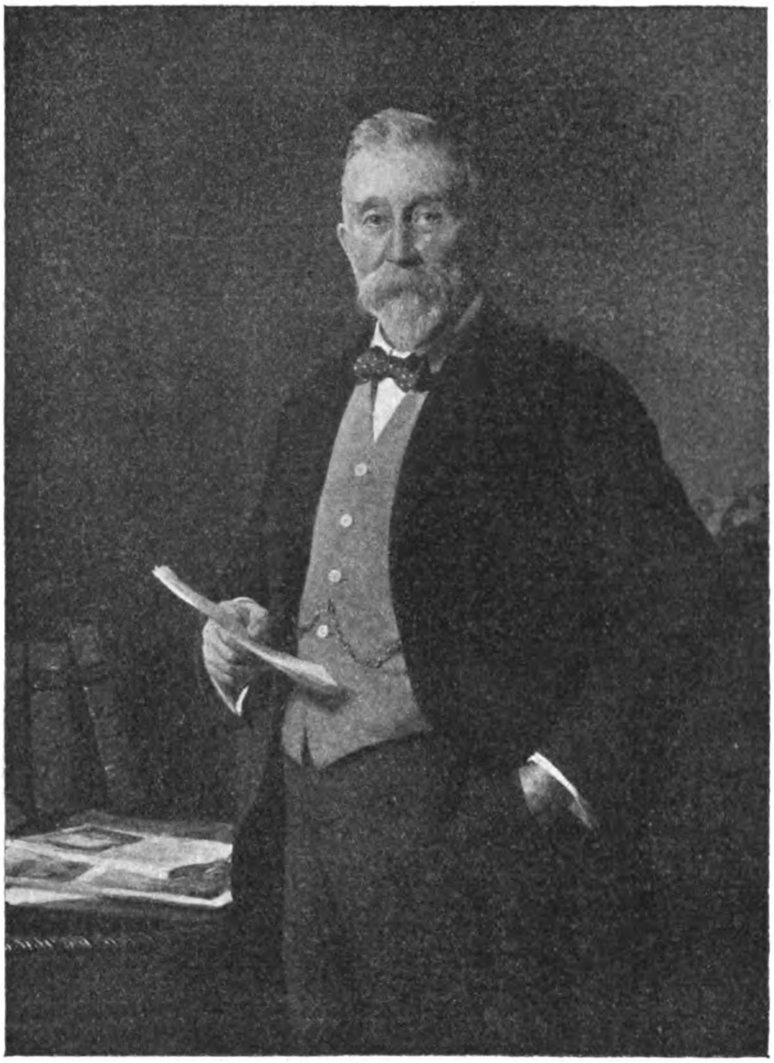
Amalgamation of two Well-known Market Nurseries.—The firm of Messrs. W. E. Wallace and Son is amalgamating with Messrs. Lowe and Shawyer, the well-known market flower growers of Uxbridge. We understand that the Carnation business at Eaton Bray will be conducted under the title of Messrs. W. E. Wallace, Ltd.

Shakespeare's Mulberry Tree.—A Mulberry tree, said to be a direct descendant of the famous Mulberry tree formerly growing at New Place, Stratford, the home of William Shakespeare, is to be planted in Central Park, New York. Two previous attempts have been made to establish cuttings in Central Park from the historic trees in Manhattan's Park, but without success. When received, the tree will probably be planted in or near the Shakespeare Garden, which is already an interesting feature of Central Park.

Horticultural and Agricultural Organisers' Conferences.—At a conference of the Horticultural Organisers held recently at the Midland Agricultural and Dairy College, Sutton Bonnington, Loughborough, Mr. J. G. Murray, Horticultural Organiser for Lindsey, opened a discussion on his experiments with Potatos, which have shown that, so far as Lincolnshire is concerned, once-grown seed from the field gives a better yield and a better quality of Potatos than Scotch seed; but once-grown seed from gardens and allotments is unsatisfactory, due in all probability to the tubers being rapidly infected with virus diseases through aphides. In 1923 a plot of Potatos from Scotch-grown seed yielded 123 lbs., whilst once-grown seed in the field yielded 158 lbs. In 1924, Scotch-grown seed gave 221 lbs.; once-grown seed in the field, 227 lbs.; and once-grown seed in the garden, 130½ lbs. There was a lengthy discussion regarding degeneracy in Potatos, and whilst it was conceded that there are many factors, virus diseases were considered the most serious; hence, the importance of obtaining seed from clean stock. At the conference of Agricultural Organisers, Mr. H. H. Stirrup, M.Sc., Adviser in Plant Diseases, gave a résumé of the chief fungous diseases met with in the College area during the past twelve months. Dealing with "Chocolate Spot," on Beans, he mentioned that outbreaks are periodic; last season the disease was very bad. There are many factors contributing to this disease, the most important of which is possibly the soft, rapid growth due to excessive nitrogen and lack of available potash in the soil. Dealing with Potato Blight, Mr. Stirrup mentioned Murphy's work in Ireland, which showed that (1) Potato blight does not spread from tuber to tuber in the pit; (2) Potatos dug after the tops have thoroughly died down keep better than those dug earlier; (3) Removing badly diseased tops a sufficient time before digging is advantageous; (4) Covering the pits with blighted but partially living Potato tops is bad practice; (5) practically all blight which develops in stored Potatos appears within about a month; and (6) the blight fungus may live independently in the soil for a short time only. Mr. Stirrup dealt later with other Potato diseases, such as Skin Spot on seed Potatos, which caused blindness; and stalk disease, which had been taken by some farmers for late blight. He referred also to Clover sickness, false mildew of Sugar Beet, and a physiological disease of Swedes, together with some notes on the chief cereal troubles experienced this year.

Damage to the Havana Sugar Crop.—It is reported that the disastrous hurricane, which swept over Cuban and the West Indies on Wednesday of last week, has destroyed about forty per cent. of the growing crops of Sugar-cane in Havana, and several of the most important sugar factories have been levelled to the ground. Another report states that 500,000,000 lbs. of sugar has been destroyed by the storm, and that this will cause a world increase in the price of sugar.

Mr. Alfred Watkins.—Our readers will remember that the veteran founder of the firm of Messrs. Watkins and Simpson celebrated his business jubilee during the present year. To celebrate the occasion the firm entertained the employees to a most delightful outing on the River Thames, and also gave them monetary presents in accordance with their years of service The employees. however, are as proud of Mr. Watkins as he is of them, and they showed their pleasure by presenting him with his portrait in oils, by Mr. T. M. Ronaldson. This life-like portrait is now hung in the firm's board room at Drury Lane, and we have pleasure in presenting a photographic reproduction of it. An appreciation of Mr. Alfred Watkins appeared in our issue of December 16, 1916.



MR. ALFRED WATKINS.

From a painting by Mr. T. M. Ronaldson.

Novel Valuation Appeal.—An appeal by the Glasgow Corporation against an increase from £3,000 to £6,000 in the valuation of the fruit market made by their own assessor was heard on Monday, October 4. It was stated that since the Bazaar's Department was instituted in 1906, there were accumulated deficits amounting to £26,200, until 1923, since when a credit balance was shown. The contention of the assessor was that the valuation should correspond approximately to the rentals received from the tenants, but it was argued that if that was to become the basis of valuation instead of a surplus there would be an annual deficit of £1,555, consequent on the increased assessment, and that it might mean the closing of the fruit market. The assessor saw no reason why the Corporation should be treated differently from other property owners and the appeal was dismissed.

The Roland-Gosselin Cacti.—By the death of the late M. Roland-Gosselin, which occurred on the 14th of August, 1925, the Natural History Museum, in Paris, has been enriched by a number of very rare species of Cacti from the unique collection formed by this celebrated botanist in his garden of La Colline de la Paix, at Villefranche-sur-Mer in the south of France. Robert Roland-Gosselin, who was born in 1854 at Aas, in the Basses-Pyrénées, had a brilliant career in Paris, taking degrees as Licencié ès Lettres, Licencié ès Sciences and Doctor of Law. On completing his studies he went into the army, and during his period of service assisted the Russian Government by directing, as chief engineer, the laying of railway lines in that country. However, he left the army for good in 1892 and settled at Villefranche, where he bought the house and garden known as La Colline de la Paix, and henceforth devoted himself to the pursuit of natural history and botany. During a period of about thirty years, he stocked his garden with rare subjects which he grew with the greatest skill and success. He paid special attention to his very large and representative collections of Cacti, Crassulaceous plants, Agave, Aloe, etc., grouped under the general description of Succulent Plants, which are so difficult to study in a herbarium owing to the practical impossibility of preserving complete specimens of each one. With the object of providing a collection which should represent as many different plants, and as many different stages of each plant, as possible, he obtained specimens from a great number of botanic and private gardens, and also imported seeds and young plants from abroad, notably from Mexico and Lower California, Costa-Rica, the Argentine Republic, Brazil, Venezuela, and Chili. During this long period of assiduous study, Roland-Gosselin made some important discoveries. *Inter alia*, he found that a number of different forms of the genus Cereus which were commonly described as different species, were simply juvenile forms, which were modified on becoming adult. He also came to the conclusion that any classification based exclusively on the shape and branching of the stems was incomplete, even if it extended to a description of the flowers, unless the fruits and the seeds were also examined. His studies of the genus showed him the extreme polymorphism of the hybrids, and the rapidity with which they reverted to ancestral types. Roland-Gosselin will doubtless be greatly missed by many who visited his garden and shared with him his enthusiasm for the really remarkable collections there. Although the garden was not open to all comers, botanists and horticulturists were always welcome. Unfortunately, during the last years of his life, his sight failed him. Up to 1913, however, he was an industrious writer and he left a large number of monographs.

Forestry and Horticulture at Aberdeen University.—At a meeting of Aberdeen University Court, held on the 12th ult., intimation was made of a gift of £5,000 from Viscount Cowdray, Dunecht, Aberdeenshire, who was Rector of the University from 1918 to 1921, which will complete the foundation of the Chair of Forestry in the University. Naturally, great elation prevails in forestry circles in the north over the consummation of the endowment of this much required chair, and warm tribute is paid Viscount Cowdray for his liberality. At the same meeting, Mr. George Redington, M.Sc., lecturer and examiner in agricultural botany, Armstrong College, Newcastle-on-Tyne, was appointed lecturer in plant physiology in succession to Dr. McGregor Skene, who has been appointed to a lectureship in the University of Bristol. Mr. Redington is a native of Chester and a graduate, with first-class honours in botany, of the University of Leeds. He has had practical horticultural experience as a farm pupil, and has published *A Study of the Effect of Diurnal Periodicity upon Fibre Production and Plant Products.* Although much has been done for afforestation in Scotland, thanks to the enlightened operations of the Forestry Commission, there are many scientific problems which remain unsolved. The difficulties, for example, of timber-growing on derelict mosses have not yet been overcome, and important experiments are meantime being carried out with a view to discovering a practical method of treating peat land for forestry. In this task Aberdeen research workers are taking an active and prominent part, and Lord Cowdray's handsome gift will give much encouragement to those who are trying to solve the many problems met with in afforestation.

Diamond Wedding of Mr. and Mrs. John Harrison.—On October 18, Mr. and Mrs. John Harrison, Leicester, celebrated the sixtieth anniversary of their wedding, at St. Mary's Church, Knighton. Mr. Harrison, one of the veterans of the seed and nursery trade, continues to enjoy good health, but we regret that Mrs. Harrison is not so robust as her stalwart husband. The couple received congratulations from many parts of the world on the occasion of their diamond wedding celebration.

A New Aster.—A new Aster of the Amellus section has been produced by a German grower, Herr L. Lindner, of Eisenach. The variety is named Hermann Löns, and the size of the flowers would appear to constitute a record, as they are said to measure 9 cm. (three-and-a-half inches) across. The colour is given as "Campanula Blue," the tone changing in certain circumstances—as, for instance, when the flowers are cut and placed in water in a window—to a rich lavender. The variety is particularly floriferous, and so symmetrical in form as almost to resemble a bouquet.

British Horticultural Association.—Many horticultural traders have been circularised lately by the British Horticultural Association (with offices in Regent Street) which, we gather from the circular "has been founded primarily to grant the degree, 'Master of Horticulture,' to all who have helped the development of horticulture in the United Kingdom. The secondary object, which is even of greater importance, is that through the granting of the Degree M.H. there may be a welding together of horticultural societies and associations existing under the British Flag." We gather also that the B.H.A. will stimulate the raising and exhibiting of new plants, the introduction of improvements in horticultural sundries, and the closer attention to art and literature. The duty of recommending anyone "for the award M.H." will be in the hands of "not less than seven examiners appointed each year for each section of horticultural enterprise." Doubtless there are some horticulturists who would like to hold the title of Master of Horticulture, but we imagine they would prefer to receive that title from a duly accredited body, that is, a University or a Chartered Society. Whether they would care to receive it at the hands of the Board of Control of the British Horticultural Association, we beg leave to doubt. Further, we believe the Board of Control in this instance is self-constituted, for we have not heard of a public meeting of horticulturists being called to establish the Association or elect the Board of Control. Moreover, from the purely horticultural point of view, the names of the members of the Board are not inspiring, although, no doubt, they are very estimable gentlemen. For the present we are not subscribing to the Association.

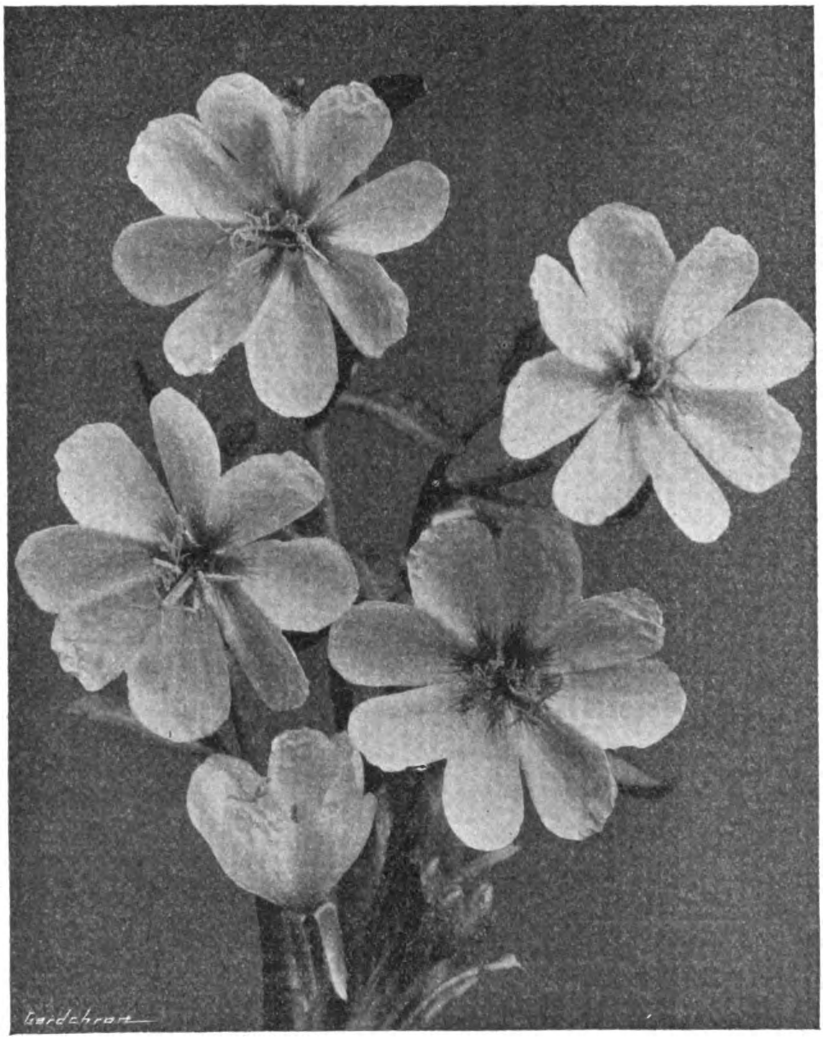


FIG. 165.—ŒNOTHERA TRICHOCALYX.

(see p. 266)

Appointments for the Ensuing Week.—SUNDAY, NOVEMBER 7: Wakefield and North of England Tulip Society's meeting. MONDAY, NOVEMBER 8: United Horticultural Benefit and Provident Society's meeting; Birmingham and Midland Counties Gardeners' Mutual Improvement Association's lecture. TUESDAY, NOVEMBER 9: Gloucestershire Root, Fruit and Grain Society's show; Croydon Chrysanthemum Society's show (two days); WEDNESDAY, NOVEMBER 10: Brighton, Hove and Sussex Horticultural Society's show (three day); Wimbledon Gardeners' Society's show; Lancaster Horticultural Association's show; Aberystwyth Chrysanthemum Society's show; Farnham and District Horticultural Society's show. THURSDAY, NOVEMBER 11: Nottingham and Notts. Chrysanthemum Society's show (three days); Sheffield Chrysanthemum Society's show (three days); Hitchin Chrysanthemum Society's show. FRIDAY, NOVEMBER 12: Leicester Chrysanthemum Society's show (two days): Leeds Paxton Society's show (two days); Hornsey Chrysanthemum Society's show (two days); Royal Horticultural Society of Ireland meeting; Association of Economic Biologists meet; British Mycological Society's Council meeting; Manchester and North of England Orchid Society's meeting. SATURDAY, NOVEMBER 13: Burton-on-Trent and Shobnall Chrysanthemum Society's show.

"Gardeners' Chronicle" Seventy-five Years Ago.—*Coe's Golden Drop Plum.*—Mr. Rivers states, in referenec to some specimens of this Plum which he has sent you, that they were shrivelled through the dryness of the atmosphere in his orchard house. Now I beg to ask, is it not the nature of this Plum to shrivel just before getting ripe? I have invariably found it do so, and I have heard others complain of the same thing; in other respects the variety is in my opinion second to none. If it is its nature to shrivel, it ought to be made known, as many employers, unacquainted with the fact, might be induced to impute it to want of skill on the part of the gardener. *J. Steel, Clitheroe.*—Seeing that Mr. Rivers has succeeded in keeping Coe's Golden Drop Plum very late in the season in pots, I send for your inspection two fruits of that variety, which were grown against a south wall, and gathered this morning; my last dish for this season will be sent to table this evening (November 4). I have been successful in keeping this Plum late for two seasons, in the following way. I take care to nail as many of the summer shoots to the wall as can well be got; the fruit is then nicely shaded from the burning sun, and so soon as it shows signs of ripeness I cover it with a close woollen net, in order to preserve it from wasps and beating rains. I believe that the crop this season would have hung till the end of this month. *William Culverwell, Thorp Perrow, Bedale.* (They were somewhat shrivelled: but very good). *Gard. Chron., November* 8, 1851.

The Week's Work.

THE ORCHID HOUSES.

By J. Collier, Gardener to Sir Jeremiah Colman, Bart., Gatton Park, Reigate, Surrey.

Calanthe.—Calanthes of the Veitchii and vestita section will soon be finishing their growths and flower spikes will be developing. The plants should be afforded all the light available and a minimum temperature of about 65°. The flowers of these useful Orchids are valuable for decorative purposes from Christmas onwards; the plants should not be grown in much heat or they will bloom too soon to be of use at that period. So soon as the first flowers commence to open the atmosphere of the house should be kept somewhat dry, and the spikes will then remain in full beauty for some weeks.

Miltonias.—The Brazilian members of this genus represented by such species as M. Regnellii, M. Binotii, M. spectabilis, and its variety Moreliana, should be kept rather dry at the roots after they have passed the flowering stage; just sufficient water should be afforded them to prevent shrivelling of the leaves or pseudo-bulbs. M. Clowesii and M. candida are developing their flower spikes, and as they pass the flowering period should be given similar treatment. These plants are very subject to attacks of red spider, especially at the present season; as a precaution against this pest, the leaves should be sponged occasionally with soft soap dissolved in tepid water.

Cymbidium.—Plants of C. Tracyanum, C. Lowianum, C. insigne and many hybrids of these useful Orchids are nearing the completion of their pseudo-bulbs, and flower spikes may appear from their bases at any time. Established specimens that have filled their pots will be benefited by occasional waterings with weak liquid manure.

Trichopelia.—The various members of this interesting genus flower at different times of the year, and for that reason repotting should be done at intervals, just as new roots appear at the base of the pseudo-bulbs. T. suavis is the handsomest species and is most frequently grown. These Orchids do well when planted in deep pans and suspended from the roof-rafters in a house having an intermediate temperature. The sweetly-scented T. fragrans thrives best during the summer in the cool Odontoglossum house, and should be removed to an intermediate house during the winter.

THE KITCHEN GARDEN.

By F. Streeter, Gardener to Lord Leconfield, Petworth Park, Petworth, Sussex.

Vegetable Stores.—During wet weather examine all vegetables in store and remove all decaying specimens; this applies to Potatos, Onions, Carrots, Beets and Shallots. Where there is no accommodation in sheds and outdoor clamps have to be relied upon, make sure that the rain does not penetrate to the roots, using corrugated iron sheets to carry off the rain, if necessary.

Globe Artichokes.—On heavy soils it is advisable to lift and pot sufficient suckers of Globe Artichokes to ensure a stock for next season's plantation. On light soils these Artichokes usually survive the winter, provided a liberal mulch of either Bracken or long litter is placed close to the stems and about eighteen inches each side of the rows. Clear away any dead or decaying leaves before applying the litter.

Trenching.—So soon as the various plots become vacant push forward the work of trenching wherever deeply-rooting vegetables are to be grown next season. For Parsnips, Carrots and Beets fresh manure is not required. Shallots will also be of better quality if grown on ground that was manured for a previous crop. Should labour be scarce, trench only to the extent of what can be conveniently done without upsetting the balance of the other work. A liberal coating of lime will prove beneficial to those soils that are deficient in calcareous matter and sweeten the beds. If club root has been troublesome, give the ground a slight dressing with gas lime, allowing it to lie on the surface for some time before digging it in.

Winter Greens.—It is advisable to examine all winter greens with a view to removing all dead and decaying leaves. Hoe the ground if possible and remove all weeds so that the air may circulate freely between the plants. Cauliflower stems should be cleared from the ground immediately the heads are cut, the ground trenched and manured for cropping next season.

General Work.—Sweep the garden paths weekly and use the roller if possible; this will ensure a smart appearance and prevent fallen leaves from getting into the gravel; it also tends to remove moss and algae which develop quickly in damp weather. Keep all decaying leaves removed from growing crops in good time, and clear away everything that is useless in the beds. When lifting Celery and Leeks take them to the yard before trimming off the outer leaves. This ensures greater tidiness and cleanliness in the garden.

HARDY FRUIT GARDEN.

By W. Auton, Gardener to Viscount Elveden, Pyrford Court, Woking, Surrey.

Morello Cherries.—The pruning and training of Morello Cherries can be done under much more workable conditions now than if left till the winter. As the fruit is borne on the previous year's wood as well as on spurs, the pruning consists in cutting out the shoots which have borne this year's crop and training the current year's shoots in their places. If the main branches of the tree are clean and in healthy condition it is not necessary to detach them, but if there is any sign of scale or other pest all the branches should be detached and thoroughly cleansed with an approved insecticide before re-tying them in position.

Sweet Cherries.—The lighter loams which provide a warm rooting-medium are the most suitable for this Cherry. Heavy clays are not congenial to them, causing the trees to gum and canker, and in such soils the stations for planting should be well-drained and a compost of light loam and mortar rubble should be afforded the roots. By growing such varieties as Guigne Annonay, Empress Eugénie, May Duke, Early Rivers, Bigarreau Frogmore, Governor Wood, Emperor Francis, and Late Duke, a continuance of supplies may be maintained over a period of fully three months.

Apples.—The Apple undoubtedly occupies the premier position amongst hardy fruits grown in this country and is the most important fruit crop in all gardens. Although the market grower generally prefers to restrict his varieties to comparatively few, in private establishments, where a considerable area is devoted to fruit, there is much to be said for growing a fairly large number of sorts. There is a wonderful range of variation in the texture and flavour of Apples, and there is much satisfaction in having an extensive collection representing these variations. Moreover, in a season like the present, when the general lightness of the Apple crop constitutes a record for recent years, the owner of the large collection gains a distinct advantage in crop. From the enormous number of varieties in cultivation, amounting to many hundreds, probably no two growers would select the same best varieties for a small collection. Many sorts are a success under certain conditions only, and every district or soil is perhaps not able to provide just these conditions.

Varieties for Planting.—To those growers who are able to grow only ten or a dozen varieties of dessert Apples to cover the whole season, one might suggest Beauty of Bath, Devonshire Quarrenden, Worcester Pearmain, American Mother, Cox's Orange Pippin, Ellison's Orange, Adams's Pearmain, King of the Pippins, Allington Pippin, Fearn's Pippin, Nonpareil and Court Pendû Plat, while many growers would equally like to include Lady Sudeley, Irish Peach, Langley Pippin, Charles Ross, James Grieve, Braddick's Nonpareil, King of Tompkins County, Cox's Pomona, Claygate Pearmain, The Houblon, Rival and Ribston Pippin. The choice of culinary varieties is equally wide, yet most small collections would include Keswick Codlin, Grenadier, Loddington, Lane's Prince Albert, Bramley's Seedling and Dumelow's Seedling, while further selections might be made from Alfriston, Annie Elizabeth, Golden Noble, Ecklinville, Lord Derby, Potts's Seedling, New Hawthornden, Lady Henniker, Schoolmaster, Blenheim Pippin, Newton Wonder, Stirling Castle, Winter Greening and Warner's King. The distance of planting depends partly on the type of tree and partly on the habit of the variety. With trees of the bush type, such upright-growing varieties as King of the Pippins, King Edward VII and Court Pendû Plat may be planted at twelve feet apart, while more spreading varieties, like Lane's Prince Albert, Newton Wonder and Cox's Orange Pippin should be given a distance of fifteen feet. If orchard standards are the type of trees being planted these distances will need to be doubled for the permanent trees. Espalier trees should be allowed a distance of fifteen feet from tree to tree, and single cordon-trained trees a space of about two feet.

FRUITS UNDER GLASS.

By T. Pateman, Gardener to Sir Charles Nall-Cain, Brocket Hall, Hertfordshire.

The Fruit Tree Order.—Where it is intended to plant new trees the order should be sent to the nurseryman at once. Nothing is more annoying to the fruit grower, after trouble taken in preparing the borders for planting, to be sent badly-trained trees that have been lifted and packed hurriedly owing to delay in ordering.

Tomatos.—Plants that are being grown for a winter crop have set their fruits freely owing chiefly to the very mild weather experienced of late. It will be wise to thin the clusters, for nothing is more harmful to the plants than over cropping. Maintain a buoyant atmosphere by using a little fire-heat, and admit a little fresh air on all possible occasions. Water the roots carefully and guard against the use of strong organic manure, which, if applied in excess, will tend to produce strong, sappy growth.

Ripe Grapes.—In vineries where ripe Grapes are hanging, the atmosphere should be kept free from moisture, so far as possible. A steady temperature of 50°, with free ventilation should be maintained, but damp air should not be admitted. Guard against overheating the water-pipes, for this will only cause shrivelling of the berries, especially of Muscat varieties. It is sometimes necessary to shade white Grapes as they are apt to become discoloured; to prevent this, there is nothing better than fixing sheets of tissue paper directly over the bunches.

THE FLOWER GARDEN.

By F. C. Puddle, Gardener to Lord Aberconway, Bodnant, Taly-Cafn, North Wales.

Alströmerias.—Although rampant growers when established, Alströmerias resent root disturbance, and when this is necessary it is better carried out in the autumn, for when planting is done in spring the tubers will sometimes remain almost dormant for the first season, a few weak growths being the full tale of the plant's activities. When this occurs no apprehension need be felt, for they usually grow vigorously enough the following season. A well-drained, sunny border, sheltered by a wall or hedge, is the best position for growing Alstrōmerias. The soil should be enriched with farmyard manure or leaf-mould, and if it is at all heavy the addition of some sharp sand is advisable. The tubers should be planted about six inches deep in moderate-sized masses, and no attempt should be made to separate the tubers singly; a distance of eight inches apart is suitable and will allow for several years' development of the plants. Under these conditions Alstrōmerias will, with perhaps the exceptions of A. Pelegrina and A. revoluta, prove comparatively hardy in all parts of the country. A light protection of leaves or straw is, however, advisable during exceptionally severe weather. A. aurantiaca is the most widely grown species, but the fine yellow A. lutea is worthy of extended cultivation; these, with A. chilensis and its varieties in pink, yellow and orange shades, form a trio of species the flowers of which are excellent for both house and garden decoration. A. psittacina is a plant for lovers of the curious; its flowers are an indescribable blend of crimson and green with a feathering of chocolate spots. The blooms of this species are very lasting and produced over a long period; our plants usually commence flowering in June, and some are still in flower at the time of writing.

Rhododendrons.—In gardens where Rhododendrons are grown extensively the work of transplanting is now in full operation. Although peat is a desirable medium in the cultivation of Rhododendrons, it is not so essential as is often believed; provided lime is absent, the majority of soils may be adapted to growing Rhododendrons. The beds should be well trenched and leaf-mould or similar organic matter added freely. Deep planting should be guarded against for Rhododendrons are surface-rooting plants. It is also wise when planting to take into consideration the soil in which the plants have been grown previously. If they are being transferred from a peaty to a loamy soil, or *vice versa*, the plants will become established much more quickly if a portion of the soil is forked from between the roots and this, together with any similar soil which may be available, should be mixed with that of the new staple in about equal portions. If the roots are in direct contact with the new soil when planting they become gradually accustomed to it. If these precautions are not taken it will frequently be found that the roots refuse to enter the new soil, the plants languish, and may be lifted a year or so afterwards with the balls of roots exactly as they were when planted. Some growers experience difficulty in deciding the amount of shade or sun which is best for the various sections of their Rhododendrons. As a rough guide it may be generally assumed that the larger the leaves the more necessity there is for shade, ranging from the large-leaved Falconeri and grande series, which require a well sheltered and shaded position, to the small-leaved Lapponicum series, the members of which grow in full sun in their high, moorland home. It should, however, be remembered that there is a great difference between the atmosphere of an alpine meadow and a sunny corner of an enclosed lowland garden. If a cool, airy position cannot be provided, a partially-shaded place should be chosen as the next best thing.

PLANTS UNDER GLASS.

By JOHN COUTTS, Assistant Curator, Royal Botanic Gardens, Kew.

Chrysanthemum Parthenium var. fl. pl.—This old garden plant is hardy, but it is surprising how seldom one sees it at the present day, and it is not generally known how useful it is as a pot plant, especially for the unheated greenhouse. It is easily propagated by means of cuttings, or offsets with roots attached may be pulled from old plants. The present is a suitable time to raise stock by these means. The rooted cuttings or offsets should be grown in a cold frame or cool greenhouse and potted on until they are in six-inch or seven-inch pots, in which they will make a fine display, flowering in wonderful profusion. The small, white, double flowers are very useful for decorative work. This plant is also useful for growing in the herbaceous border, and makes a fine summer bedding subject associated with other kinds.

Jacquemontia violacea (syn. Convolvulus pentanthus).—This slender, climbing plant produces its beautiful blue and white flowers more or less all the year round, and on this account is deserving of more general cultivation, especially in small houses. It is easily propagated by means of cuttings which root readily at any time in a propagating case furnished with slight bottom heat. Any good potting compost is suited to this plant, which may be grown successfully in a well-drained bed or border, or in a large pot; it grows and flowers freely in a temperature of 50° to 60°.

Roman Hyacinths.—Bulbs that were potted early in the season should now be well-rooted and ready for forcing. If not already removed from the ashes or fibre they should be lifted from the plunging material forthwith, in fact, all bulbs should be removed from the ash bed so soon as they are well-rooted and stood in cold frames until such time as they are required for forcing. A quantity of the stock, according to requirements, should be introduced to a warm house.

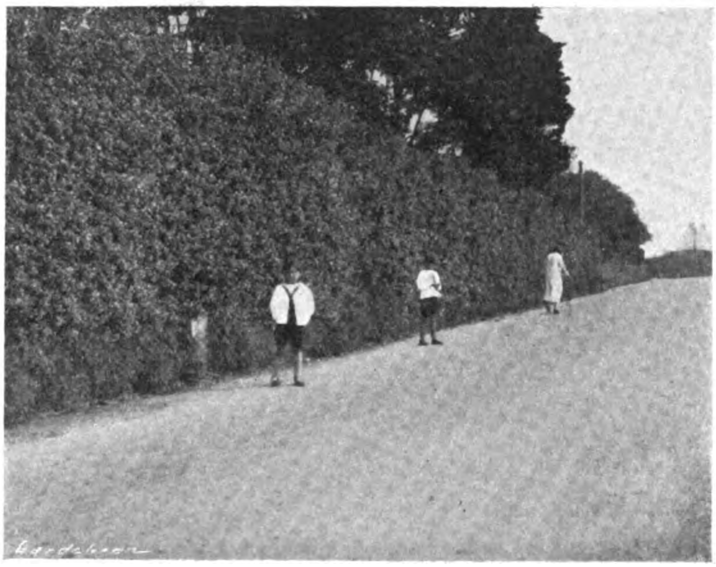


FIG. 166.—AN ESCALLONIA HEDGE IN GUERNSEY.

(see p. 369.)

Although these Hyacinths force readily, it is wise to allow them to develop gradually, for neglect in this respect often leads to failure; Tulips especially are apt to go blind if introduced directly into an excessively high temperature. Paper White Narcissus should also be introduced to a greenhouse. Although the plant forces readily, it naturally flowers so early that it may easily be had in bloom by Christmas by growing it in a warm greenhouse.

FOR NORTHERN GARDENERS.

By A. T. HARRISON, Gardener to the MARQUIS OF AILSA, Culzean Castle, Maybole, Ayrshire.

Dahlias.—Accommodation for storing the dormant Dahlia tubers may be found in any frost-proof cellar or shed capable of keeping Potatos in good condition during the winter. A convenient method is to use the same style of boxes as for storing seed Potatos, and stack them one above the other in tiers, with plenty of air-space all around so that they may be conveniently looked over occasionally during the winter. Should exceptionally severe weather occur they may be easily given further protection by spreading mats over or straw between and over the tiers of boxes. In mild districts Dahlia tubers will survive ordinary winters without being lifted; we have plants here that were put in six years ago and they send up new growths every spring and flower profusely during the autumn.

Lobelia cardinalis.—This extremely fine perennial, which is not hardy in inland gardens, should be lifted and kept on the dry side for the next two or three months. Any fruit house, in which the trees are at rest, may be used to store the roots, and they may be laid closely together on the border, packing soil between the clumps. When stored in fruit houses, however, they are sometimes in the way, and it is better to pack them closely into boxes, which may be easily removed when the washing and cleansing of the house takes place. Any clumps left in the outside border should have a quantity of sand or ashes put around them to assist in protecting them from very cold weather, as well as from the attacks of slugs; one kind of slug is particularly attracted by this plant, and may be found well up the flowering stems during showery weather in autumn.

Clearing Herbaceous Borders.—When most of the autumn-flowering plants are over, the borders may be cleared and the stems of such plants as Michaelmas Daisies and Phloxes cut to within six inches of the ground. Many plants of doubtful hardiness, however, will have a better chance of surviving if left to the protection afforded by their own withered foliage and stems. While the weather remains open the present is a suitable time to attend to herbaceous borders. Remove those plants which by their hardy constitution are apt to usurp more than their rightful share of the space provided, and, after making the sites up with fresh soil and manure, rearrange the finer kinds so that at no period of the flowering season should large gaps occur. The finer kinds of Montbretias, such as Star of the East and Lord Nelson, should be lifted and kept under glass as advised for Lobelia cardinalis, until such time as the stocks are sufficiently large to risk a percentage of the roots being left out all winter; these greatly improved forms do not increase in numbers like the old M. crocosmiaeflora, which becomes a perfect nuisance in our borders, and has now been transferred in large colonies in the woods, where it is quite at home and very effective. Any increase of the finer kinds of herbaceous plants is now readily affected by pulling the old stools to pieces and placing them in a frame among sandy soil. In the case of certain varieties the old flowering stems pulled out with a heel soon make useful plants.

PLANTS NEW OR NOTEWORTHY.

ŒNOTHERA TRICHOCALYX.

THE Evening Primrose family is well-represented on the continent of North America, some eighty species being recognised. Naturally there is considerable variation among the various members of the genus, so much so that they have been separated into several groups with generic names. We thus have the well-known Œnothera fruticosa appearing as Kneiffia fruticosa; Œ. biennis comes under Onagra; Œ. speciosa under Hartmannia; Œ. caespitosa under Pachylophus; and Œ. missouriensis under Megapterium; while the subject of this note is also known as Anogra trichocalyx. Under Anogra is also included the white-stemmed Œ. albicaulis, with deeply pinnatifid leaves and larger flowers than in our plant.

Œnothera trichocalyx is biennial or perennial according to conditions, with erect, simple stems about one foot high, clothed with pinnatifid leaves. The whole plant is covered with a whitish pubescence, the young leaves having long, flat hairs. The good-sized flowers are white at first but often fade to a rose colour with age. The species is found on the plains of the River Platte in the Rocky Mountains, growing in gravelly, well-drained soil, coming into flower in June. As to its hardiness in this country I have no knowledge, but it will probably have to be treated as a biennial.

In the form collected by Mr. J. M. Bridgeford—of Messrs. Watkins and Simpson, Drury Lane—in California (see Fig. 165), the flowers remain open all day, are pure glistening white, with golden anthers, and the plants grow about fifteen inches high. *W. I.*

ALPINE GARDEN.

SILENE MARITIMA.

ON many of our sea coasts the glaucous leaves and white flowers, with inflated capsules, of Silene maritima are familiar objects, and closer examination than it is wont to receive will reveal quite a number of points of beauty. It is perhaps too common to entitle it to a place in our gardens, but it has yielded two varieties of some merit, and it is to these that I wish to call attention. One of these is a pretty, rose-coloured form, called S. maritima rosea. The flowers are of a pleasing light rose colour, and the greyish, inflated capsules have the delicate veining of the ordinary or white form, which is known as the Witches' Thimble.

The other variety is a most distinct one. It has double flowers like those of a white garden Pink, and has the defect common to so many of the Pinks of bursting its calyx, although this defect is not constant. It is offered in catalogues as S. maritima fl. pl.

These Seaside Campions are quite easy to grow in the garden, but their proper place is in sandy soil in a sunny part of the rock garden, where they should be planted so as to droop over a stone. The plants do not grow more than an inch or two in height, and are of a somewhat trailing habit.

Plants may be purchased in spring and will bloom in summer. *S. Arnott.*

SEDUM ALBUM CHLORATICUM.

SOME years ago, Dr. Lloyd Praeger sent me a whole set of Sedums—it was after he had written his valuable monograph on the family—and I think of all the species that were new to me in that collection, by far the most charming and valuable was Sedum album chloraticum. It is a dwarf-growing Stonecrop, its short limbs scarcely rising from the ground. The tiny leaves are almost spherical and of a bright, cheerful Spinach green, fresh and glossy. At flowering time it smothers itself with clouds of tiny blossoms of purest white. The flower sprays rise to a height of two or three inches and so white and feathery are they, that they look as though the ground were strewn with large masses of very white soap-suds. The plant is absolutely hardy, and like most Sedums, ridiculously easy to grow and propagate. There is no need for such directions as "division, cuttings or seed," in connection with the propagation of this Sedum. If you have the plant, and want more of it, all you need do is to take a portion of the plant, rub it lightly in your hands, and throw the result down upon the ground which you wish to clothe. Every tiny leaf and scrap of stem will at once turn round and root, and quickly make a plant. This rough-and-ready method of increase may be applied to most of the small-leaved Stonecrops. Sparrows and Blackbirds teach us the lesson. I have in my rock garden a huge patch of Sedums, a dozen or more sorts, including S. album chloraticum, planted, mixed, on a thin sheet of soil, on the upper flat side of a large rock. The patch is roughly three feet by four feet, and always around the base of this great stone there is a fringe of Sedums, springing from scraps of stem and odd leaves which have been scratched over the edge from above by early-morning blackbirds. This, by the way, is a particularly attractive way of growing Stonecrops, viz., mixed, and planted thickly on some hot, sunny sheet of thin, poorish soil. They join up into a delightful patchwork of varied colour.

Sedum album chloraticum is an excellent plant for naturalising in the crevices of paving stones, for hot places in the wall garden and also for clothing old, tiled roofs. *Clarence Elliott, Stevenage.*

ANTIRRHINUM SEMPERVIRENS.

THIS slender-growing and somewhat procumbent plant requires a warm situation in the rock garden, a well-drained and gritty loam and immunity from excessive damp.

The flowers are produced at the tips of the branchlets; the corolla is long, dull white, with a yellow blotch; the upper lip has a few lilac or purple lines. The small leaves are opposite, and covered with glandular hairs: the stems are slender and hirsute.

It is a pretty little plant, native of the Pyrenees, whence it was introduced so long ago as 1752; it is very closely allied to and possibly identical with A. molle.

A stock of this plant should be maintained in a cold house or frame during the winter, as it is most prone to injury from excessive damp. *Ralph E. Arnold.*

HARDY FLOWER BORDER.

RUDBECKIA SPECIOSA.

PERHAPS better known under the synonym R. Newmanii, this fine old border plant should be included in every collection of hardy herbaceous plants. The flower-heads are from two to four inches across, the ray florets of a glowing orange colour and presenting a striking contrast to the purplish-black disc.

This Rudbeckia flowers over a long period during the summer. It is easily increased by division of the roots. *Ralph E. Arnold.*

TEUCRIUM SCORODONIA CRISPUM VARIEGATUM.

WE are given somewhat to follow a narrow and somewhat monotonous groove in our choice of edging plants, and it is strange that so quaintly interesting a plant as the variegated form of the Curled Woodsage is not frequently used to edge herbaceous borders of small extent. It is an easily-grown and easily-propagated plant which may be kept trim and neat with a small amount of labour. The variegation is yellow, brightest when growing in a somewhat harsh, gravelly soil, but the plant will grow well in most soils, more or less vigorously, according to the richness of its rooting medium.

Cuttings root readily, either in autumn or spring, and such plants make neater and more uniform edgings than divided roots. *M.*

SALVIA ULIGINOSA.

THE dry weather of September and early October has improved most flowers in the open and I do not remember having seen S. uliginosa in better condition than it was the first week in October. The tall, graceful spikes of gentian-blue flowers produced in quantity have been most effective, and furthermore stakes or other supports, which often mar the beauty of a plant are not needed.

This Sage is a fine subject for the herbaceous border, and when shown before the Royal Horticultural Society on September 9, 1913, it received an Award of Merit. Although thirteen years have passed since the award was made, this plant is not cultivated so extensively as its merits deserve, and it is only on rare occasions that I have seen it grown to any considerable extent. A bold clump may be obtained in a year or two, even if the roots are small to start with. The plant attains to a height of four to five feet, is graceful, free-flowering, and branching.

The individual blooms are not so large as those of S. patens, but are more numerous, and a large number are open at the same time. As the flowers fade, the inflorescence elongates and new blooms appear in succession for several weeks.

The finest results are secured by growing young stock, and this is best accomplished by taking off outside pieces, and replanting every second year. If a new site is not possible, the old station should be enriched with partially-decayed manure. This Salvia may also be increased by cuttings inserted in September or October; they will root readily in a cold frame if placed in receptacles filled with sandy soil. S. uliginosa is a native of Brazil, and in cold districts it would be advisable to cover the roots with a layer of ashes during periods of frost. *T. W. B.*

BOLTONIA ASTEROIDES.

VERY little seems to have been written about Boltonia asteroides, or False Chamomile as it is sometimes called, yet it surely merits a place in all herbaceous borders.

It belongs to the Compositae, and was introduced into this country from North America in 1758. At that time, it was supposed to grow to only four feet in height, though the majority of the plants of the present day strains attain a height of six feet or over.

The small, white, Daisy-like flowers, flushed with pink, are produced in great profusion on slender branching stalks early in September, and continue to develop until cut down by frost in late October.

As the plant is a surface-rooter it flourishes best in a rich, moist loam, but it will thrive in any good garden soil, either on a sunny or shady border. It increases rapidly and is best propagated by division of the roots in April.

The flowers have a light and airy appearance, they may be cut with long stalks, lasting fully a week in water and their effect is enhanced by artificial light. *Wolseley Banks.*

HELENIUM CRIMSON BEAUTY.

MOST of the Heleniums which have flowers of other than yellow colour are either coarse in growth or disappointing in richness of shade, the so-called crimson being too much of a brown to be bright.

Neither of these objections are applicable to Crimson Beauty, which is a plant of neat, perfectly erect habit, not more than two feet high, whilst its colour is full of life and fully justifies its name. In good-sized clumps it is a very excellent border plant, whilst its uniformity and persistency make it a very suitable subject for filling large circular beds in public or private gardens.

It is a good flower for staging at shows, in classes for six or a dozen vases, or in the larger classes for collections, and I have seen it very effectively used in a flat, black bowl, with its stems held by one of the double wire grid arrangements, and placed upon a mirror-backed sideboard.

Heleniums need not be considered fastidious in regard to soil, but they produce decidedly the finest flowers when the soil is rather on the heavy side but kept open with some material such as spent Hops or stable manure which contains sufficient short straw to make it light and flaky. *A. J.*

FLORISTS' FLOWERS.

DAHLIAS.

It has taken some twenty years to break down the prejudice against the Dahlia as a general garden subject, and the change in public favour has not been spasmodic, but more or less gradual. The departure from the exhibition types on the part of raisers, who turned their attention to producing sorts more suitable for garden decoration, both at home and abroad, made perhaps the first step towards the present-day flowers. The superintendents of public parks, especially the London Royal parks, have realised the value of the Dahlia for their huge borders, and have planted them extensively during the past decade, not in a limited number of varieties as they used to do, but in collections of hundreds of varieties and thousands of plants. Suitable varieties have been selected from America and various countries in Europe besides those raised in this country. The crowds that line up in front of the Dahlias in Hyde Park and in Regents Park are testimony of the interest these parks are spreading in the Dahlia, not only in London, but in all parts of the Empire. Regents Park is perhaps unique in this respect, as the many thousands of visitors to the Zoological Gardens pass through it daily, while the worn-out turf in front of the Dahlia borders in Greenwich Park is ample evidence of the interest taken in the flower in this beautiful old English park. The same interest is manifest in the L.C.C. parks and public gardens.

The National Dahlia Society, at its Conference and through its *Year Book* has persistently advocated the claims of the Dahlia as a decorative plant in the garden. These and no doubt other reasons have brought the modern plant to its present state of popularity.

The dwarf-growing varieties of the Mignon type have in many cases replaced the Zonal Pelargonium as a bedding plant. Coltness Gem is the standard variety, and there is nothing yet to surpass it in its colour, though the newer variety, Paisley Gem, is brighter in tone, and an excellent sort generally. The best yellow is H. J. Jones, while if a softer tone is desired Ada should be selected, as it is one of the best bedders. Grace I like best of the orange shades for it is much freer in growth and flower than Avondrood. In pinks we have Pink Coltness, a fair colour, but the plant lacks a good constitution, and Major von Sweiten, which produces good flowers but is not sufficiently floriferous. The white-flowering varieties are not so good as some of the coloured sorts. L'Innocence is, perhaps, the best; White Gem is too thin and fleeting, while Niveus is hardly free enough. We are still without a really good white variety in this section.

This type of the Dahlia will probably soon be eclipsed by dwarf plants carrying double flowers of the Cactus and decorative types, which will be all to the good, for the present Mignons require daily attention in the removal of seed pods or they cease to flower satisfactorily. Mere plucking of the pods is not sufficient, the entire flower stem must be removed, and this daily attention is a tax on the growers' time.

There are bedding varieties which grow only from two to three feet high according to the soil and position. They are most effective in large beds on lawns, or in small gardens where space cannot be found for the larger types. The best white variety for this purpose is Kaiserin Augusta Victoria; it is rather stiff but a excellent bedder. There has been a splendid bed of this variety in Greenwich Park this autumn. Acclamation has been greatly admired in Hyde Park this year; it is one of Mr. T. Hay's discoveries and will be greatly in demand. The plants have been literally covered with flowers of a rosy carmine colour. This Dahlia is best planted in a bed by itself or in association with a white sort, for it is a very difficult colour to blend with others. Prestige is also another Hyde Park "discovery,"; it grows about two to two-and-a-half feet high and has bright orange flowers of full size; this Dahlia flowers very freely. Moorcap is one of the very best bedding crimson sorts; it grows freely and the flowers are not too stiff. Crimson Flag is also very good in this colour, a real town flower, though rather stiff in appearance. Dobbie's Bedder is pale yellow or primrose and the best of its colour, a most effective bedding subject. Barlow's Bedder, a well-known red variety growing about thirty inches high, is remarkably free-flowering. Those who like bicolors should grow Reginald Cory, crimson tipped white; it is a splendid bedder. The best of the orange shades is Charlotte, a dwarf variety, not too stiff and very effective in a bed. Pink Pearl is a very popular variety with rose-pink flowers.

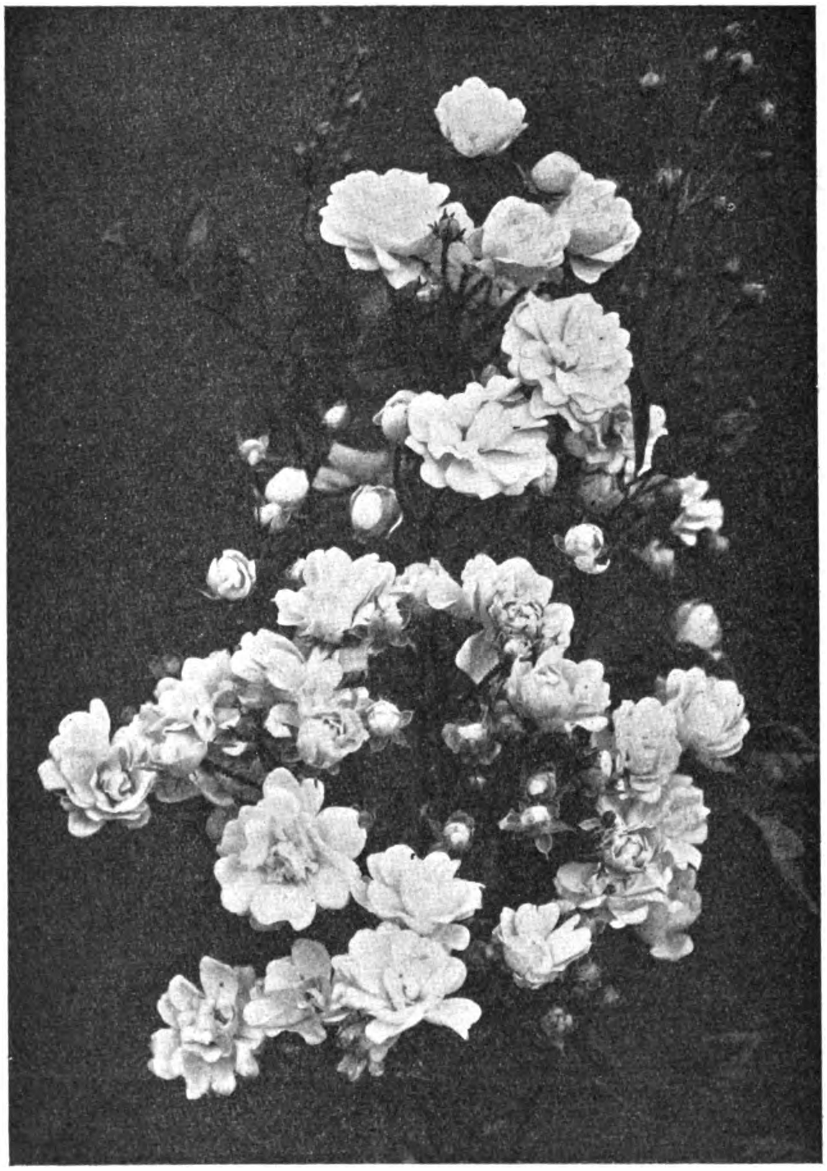


FIG. 167.—ROSE CORAL CLUSTER.
(see p. 368).

The plant is profuse in flowering and has a good habit, though it grows about three feet high. Brentwood Yellow is still the best deep yellow bedder and rarely grows more than two feet high. Aureola, a golden apricot variety, with erect habit, is another desirable sort.

It was a wise decision of the joint committee of the National Dahlia Society and the Royal Horticultural Society to grant awards to new varieties only after they have been tried in the garden, and the trial of Dahlias each year at Wisley is one of the most interesting features of these gardens in late summer and autumn. This season several promising novelties have been judged worthy of trial at Wisley next year. *J. B. R.*

ROSE GARDEN.

POLYANTHA ROSES.

As the planting season approaches thoughts will turn in many cases to the renewing of old Rose beds or the making and planting of new ones, and more use might be made of the dwarf Polyantha section of Roses for the embellishment of the flower garden than is usually done. For some reason this charming section of Roses is sadly neglected. In many places one sees them occupying some out-of-the-way corner, as if they were of no value and had simply been stuck in to fill a vacancy. Yet they are worthy of the best of cultivation and will amply repay any extra care expended on them. It does not seem to be generally understood that their flowering season is as long and their freedom of flowering equal to many of the hybrid Teas, also that in most cases they resist mildew much better.

The intending planter will be well advised to devote as much time and attention to the preparation of the beds or borders, by deep trenching and incorporating a plentiful supply of bone-meal and farmyard manure during the process, as if he were preparing ground for choice Hybrid Teas.

The idea that existed and prevails in many quarters to-day that Roses can only be grown successfully in clay soils is not justified, as they will grow well on light, sandy soils if the initial preparation has been well done. On such soils it is a great advantage to add a liberal supply of half-decayed turfy loam of good texture from an old pasture, as well as cow manure. Fine effects can be had with this class of Rose by planting half-standards through the beds of dwarfs, the growths of the dwarf varieties rising sufficiently high to cover the naked stems of the half-standards, and the beds lose the flat effect that they would otherwise have if large masses were used. This method of planting is adopted in Greenwich Park, and a bed of dwarf and standard Polyantha Roses was illustrated in *Gard. Chron.*, September 12, 1925, p. 205.

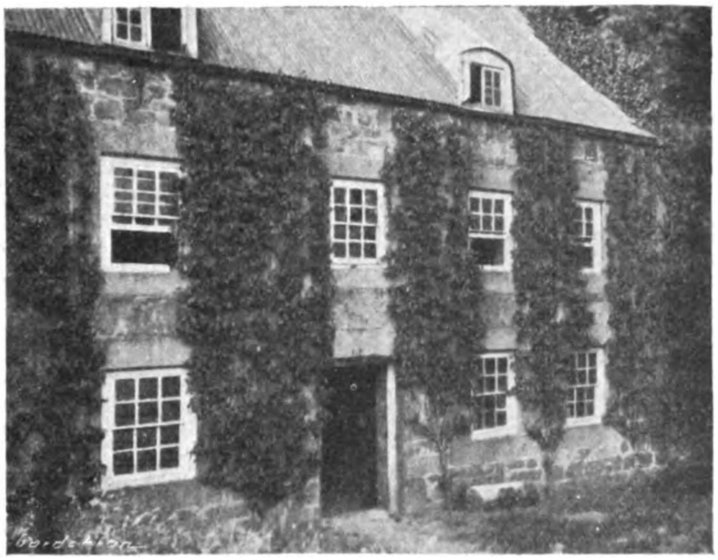


FIG. 168.—MARGUERITE MARILLAT PEARS ON AN OLD HOUSE IN THE CALEDONIA NURSERY, GUERNSEY.

It is not generally known that Polyantha Roses are excellent grown as tall standards, and they do exceedingly well on the Rugosa stock. These standards have a much longer season of flowering than the larger-flowered types; indeed, they are in bloom practically the whole season through.

This class of Rose also forces well, and gives an abundant and perpetual crop of flowers under glass, therefore it should be freely used where the demand exists for forced plants in spring.

There are numerous varieties to select from, although the range of colours is limited, being mostly white, pink and crimson. There is not a satisfactory orange or yellow variety.

Amongst the varieties that will be found satisfactory for either purpose, the well-known Orleans Rose, with its large trusses of bright Cherry-red flowers, is still one of the best. Coral Cluster (Fig. 167, p. 367), a coral-pink sport from Orleans, is distinct and attractive, but at times inclined to revert to the colour of the parent. Yvonne Rabier is a pure white variety with a faint tint of sulphur at the base. It is an extremely free and continuous bloomer. During early October a bed of this variety is equally as well flowered as it is during early summer and there are some flowers all the season through. Mrs. W. H. Cutbush is a desirable sort with large trusses of small, pink flowers.

Crimson Orleans should not be omitted, as it is of excellent colour, one of the freest growers and continues to flower over a long period, finishing up the season with as good a crop as the first one.

Else Poulsen has rather larger flowers than son Orleans. They are semi-double, of ful shade of rose-pink, borne on stiff, erect stems. This variety flowers freely during summer and autumn and is to be highly recommended for decorative work.

Ellen Poulsen is of a vigorous, bushy habit with bright, cherry-rose-coloured flowers with a cream base. Vulcan is near in colour to Crimson Orleans, but produces a rather larger truss of flowers. Edith Cavell is bright scarlet, overlaid with crimson. It is a free and continuous bloomer, but is inclined to burn a little during bright sunshine.

Rudolph Kluis is very similar in growth and habit to Ellen Poulsen, but of a bright vermilion red. It makes an excellent plant, being more or less mildew-proof.

The pale pink Mrs. R. M. Finch, of Australian origin, is one of the best, making good growth, is free and constant in flowering, and should be in every collection when sufficient stock is available.

Eblouissant has loose corymbs of brilliant velvety-red flowers which retain their colour well, and it is a free and perpetual-flowering variety.

Orange King is distinct, with its large clusters of small, double flowers of a deep shade of orange, which are very attractive when young, but inclined to burn in strong sunshine. *F. W. G.*

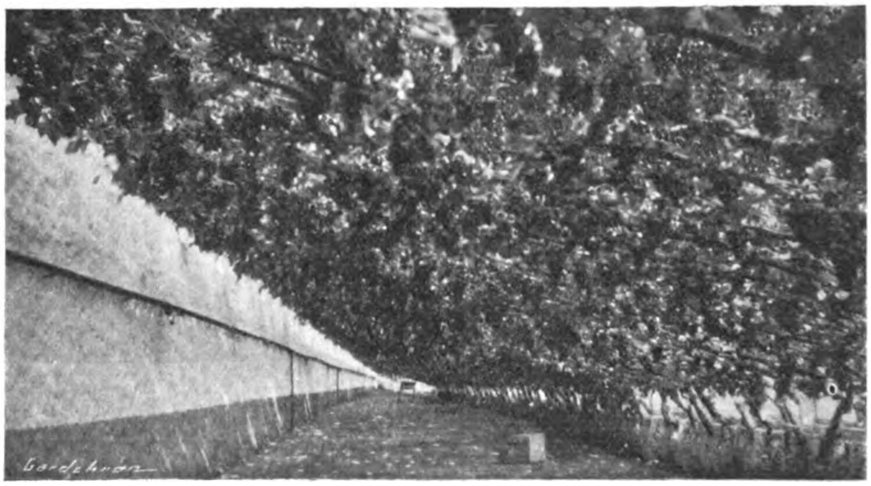


FIG. 169.—VINERY AT LONGFIELD NURSERY, GUERNSEY, CONTAINING NEARLY 30,000 BUNCHES OF BLACK HAMBURGH GRAPES.

HORTICULTURE IN THE ISLAND OF GUERNSEY.

(*Concluded from* p. 349.)

No. II

The principal horticultural exports of Guernsey are Tomatos, Grapes and other fruits, flowers, hothouse Potatos, vegetables and choice temperate and sub-tropical plants. Items that receive very special attention are Melons—in particular the Guernsey Netted Melon—Figs, Bulbs, Smilax, Freesias, Arums, and in some cases a bevy of beautiful decorative plants.

Smilax.

Most of the Smilax on the English market appears to come from Guernsey, but only a very small proportion of the decorative Asparagus comes thence. Smilax is often taken as a two-year maincrop, the fibre of the roots then providing a good medium for a bumper crop of Tomatos. It may, however, be taken as a catch crop, being grown in large pots from which cotton threads are run to wires placed above. The Smilax is trained along these threads, the insertion of which involves a considerable amount of tying—up to 20,000 threads being required in some houses.

Grapes.

Grapes have suffered in recent years from overseas competition and are by some authorities believed to be gradually dwindling in quantity. They are still, however, grown to perfection at a number of vineries, Black Hamburgh, Gros Maroc, Canon Hall, Gros Colmar and Alicante being stocked. In one house at Duvaux Farm (Messrs. Ogier) were seen some magnificent Canon Hall Grapes, one bunch being about eighteen inches in length, though not so perfect in form as others of about twelve inches long. Perhaps the show place of the island for Grapes is one house 750 feet long by about twenty-four feet wide, of lean-to pattern, against a high wall forming a road boundary of the Longfield Vinery (Mr. Galienne). This house (Fig. 169) contains 500 vines, and at the end of August these bore nearly 30,000 bunches of Black Hamburgh Grapes of fine quality. In a near-by house a single vine bore 700 bunches of Gros Maroc of large size and excellent flavour. Two interesting points in connection with this vinery are that the owner and one man do all the training of the vines and thinning of the bunches, and that the Grapes from the establishment are all sold retail by the grower, chiefly packed in small, stout, chip handle baskets with wooden lids and dispatched by boat and train to addresses in England.

The export of Melons (100 tons) includes the

Guernsey Netted Melon, a special luxury during spring and early summer.

Figs are grown less extensively than formerly, chiefly, perhaps, because the crop is difficult to grow successfully under glass. When successful, however, it is quite profitable, and at Duvaux Farm the Messrs. Ogier appear to have the secret of success. One trained tree about eighty years old was stated to be still bearing reasonably well.

BULBS.

Bulbs have come to be grown extensively in Guernsey in recent years, both for cut flowers and for the sale of bulbs, and the writer heard of £160 and over per ton being paid by a small grower for some classes of Narcissi. The best customer for bulbs has been the United States, but her existing regulations with a view to the control of diseases is regarded as the worst blow the growers have suffered ; as American buyers are not taking their usual quota prices have fallen by about fifty per cent. Bulbs exported from Guernsey in 1924 totalled 195 tons (sixty-nine tons less than in 1923), whereas her imports were 850 tons—a great increase over the 546 tons imported in 1923. These imports are believed to be chiefly Dutch, and for this reason, and in view of the reduced exports of the U.S.A., a writer in the 1926 *Year Book of the Guernsey Growers' Association* suggests that the growers should refrain from buying and force a proportion of their stocks each year, thus reducing the rate of increase and lengthening the market season, this having the effect of lessening the risk of gluts. Bulbs are not only forced and grown in the land surrounding the glasshouses, but they are grown on the hillside terraces on the southern side of the island, up to 200 feet and 300 feet above sea-level. The terraces are made by erecting earth or earth and stone walls, the soil between being well cultivated, sheltered and warm, while it may be irrigated if need be through the agency of the hydraulic rams.

In connection with bulb cultivation the eelworm trouble is liable to cause great loss, and to combat this the hot-water treatment of bulbs is practised. This consists in steeping the bulbs in water for four hours at a temperature of 110°F. There are no doubt many ways of doing this, the most common perhaps being the use of sacks as bulb containers. A plan in use in Guernsey, *e.g.*, in the case of Mr. Priaulx, of St. Martins, seems to be both simple and effective, the bulbs being placed in rectangular perforated metal containers holding seventy-five pounds each (Fig. 170). The filled containers are lowered into a tank containing water at a temperature of 118°F., which immediately drops to 110°F., or thereabouts. The water is kept at this temperature for four hours, when the bulbs are hoisted out and left to dry.

POTATOS.

The Guernsey Potato trade differs widely from that of Jersey, it being essentially a hot-house crop, planting taking place in early September for digging in November and December, in November for January-February, and so on. In Jersey, on the other hand, new Potatos are almost exclusively a spring crop, grown in the open. In Guernsey also it is a common practice to plant Potatos in the open at the end of December, especially on the warm, sunny slopes of the southern side of the island. Here early Potatos may be followed by out-door Tomatos, as already stated.

TOMATOS.

The extent of the Tomato trade has already been mentioned. The Tomato crop has been put by Mr. E. S. Shoults as roughly equal to one-half of that of the Lea Valley and three-quarters that of Worthing and other districts together. In the main it is grown under glass, the earliest with artificial heat and the later in cold frames (sun heat only), but a good many are grown in the open air for home use. Stringing is carefully done, and most of the foliage and all side shoots are gradually removed up to the fifth truss, after which the plants grow extensively and afford a satisfactory shade from the sun's heat. In a few cases Tomatos are grown as a catch crop under Grape vines, but it is essential that the latter be regarded as the chief crop, or the result will most likely be a failure of both. Messrs. Ogier, at Duvaux Farm, found that white fly did not attack the vines if Tomatos are grown beneath. The Tomatos are, of course, kept well below the vines, but will produce three or four trusses. A great favourite is Kondine Red.

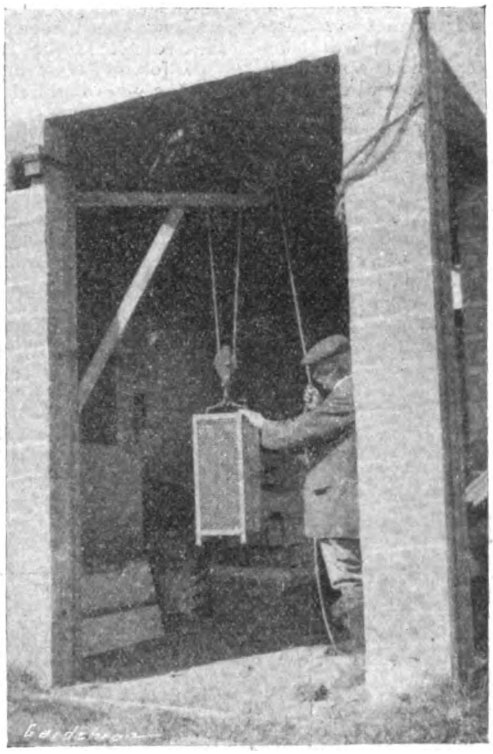


FIG. 170.—BULB-CONTAINER USED IN GUERNSEY FOR STERILISING NARCISSI.

The best of the Tomato trade is over by September, but a supply of lower-quality fruit is supplied until December—chiefly by small growers, and the Tomatos are commonly not ripened on the plants, but in boxes, or hung on wires.

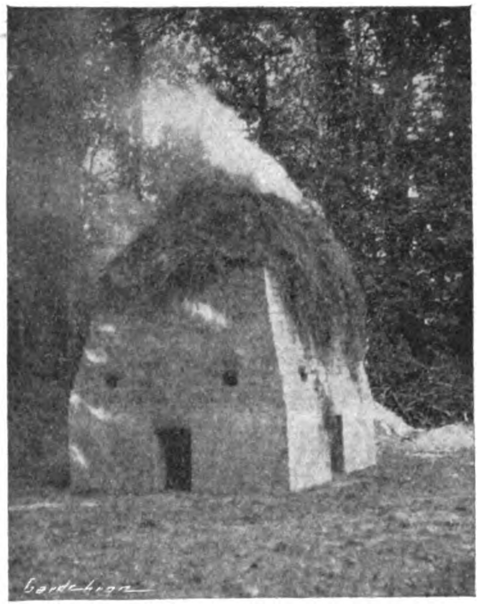


FIG. 171.—INCINERATOR IN THE CALEDONIA NURSERY, GUERNSEY.

FLOWERS AND PLANTS.

The quantity of flowers and plants exported has already been mentioned. Flowers are grown both in the open and under glass, but mostly outside. Smilax, Freesias, Arums, Cypripediums, decorative greenhouse plants, stove plants, Chrysanthemums, flowering bulbs and many others are extensively grown. Quite an exceptional establishment is the Caledonia Nursery (Messrs. Charles Smith and Sons), since it is scarcely to be numbered among "Guernsey growers" proper. It is devoted to nursery work—fruit stocks, Roses, Rhododendrons, Azaleas, shrubs and, in particular, rare and choice temperate and sub-tropical plants. It seems to be the great desire of this firm to supply plants to meet the restrictions due to soil, climate, aspect and elevation. Here was seen the fine wall of Marguerite Marillat Pears (Fig. 168), and the incinerator for weeds, clippings, etc. (Fig. 171).

VEGETABLES.

Large quantities of vegetables are grown both for export and for consumption in the island. Beans, in particular, are available practically right through the year, both Runner and Dwarf French types being grown under glass from October to mid-January as a catch crop, and from February to mid-July as a main crop. Broccoli are extensively grown in rotation in the open. Radishes of the long types are rather a special crop, as to the bulk in the open, but as to part under glass "to benefit the soil." In the exhibitions may be seen fine collections of vegetables in competition, Lettuces, Onions, Carrots, Beet and Parsnips being particularly good.

SOIL STERILISATION.

Soil sterilisation is widely practised in connection with the glasshouse business. It is carried out by a variety of methods which are designed to blow live steam under pressure direct into the soil of the greenhouse or through soil packed in containers, these latter being effectively made of concrete.

In conclusion, the wonderful Hydrangeas, Fuchsias, Pelargoniums and Cordylines in the gardens are a delight to the eye, as are the Ferns in the "water lanes."—the Hart's Tongue Fern being particularly in evidence The huge hedges of scarlet Escallonia must strike visitors as marvellous, even that shown in Fig. 166 not being the highest seen ; while some of the shrubby Veronicas grow like weeds. *H. C. Long.*

BULB GARDEN.

BRUNSVIGIA JOSEPHINAE.

BRUNSVIGIA Josephinae, a native of the Cape of Good Hope, belongs to the Amaryllis tribe. In the gardens of La Mortola, Brunsvigias do very well as the climate suits them here perfectly. Some very fine specimens flowered this year, the umbels carrying from twenty to thirty flowers each ; the colour is a brick-red and very effective ; the leaves develop after flowering and are broadly strap-shaped.

Seeds are freely produced here and these should be sown immediately they are ripe. The seedlings will flower when they are three years old, and the bulbs are sometimes eight inches in diameter.

Propagation is also secured by offsets, of which the large bulbs produce but few, although when planted out in the open offsets are produced more freely than under pot-culture.

Brunsvigias have a period of growth and a period of rest ; after the latter period they should be allowed to start into fresh growth without stimulation. So soon as they start, liberal supplies of water should be given. If grown for greenhouse decoration, good-sized pots are necessary, and a mixture of loam, peat and sand in equal parts. Although usually confined to the greenhouse or warm conservatory, Brunsvigias could be successfully grown in a south border at the base of a wall, or planted out in a pit upon which the lights should be placed in winter, as they cannot endure frost. Soil as above mentioned, with good drainage, will produce satisfactory results provided the bulbs have a good season of rest.

B. Josephinae is the best-known species ; others are B. multiflora, B. striata, B. Radula and B. lucida. *H. Bruins-Lich, La Mortola.*

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THE WEATHER GLASS AND HOW TO PREDICT THE WEATHER BY IT.

THE following information on the weather glass has been drawn up in view of the near approach of winter. At this season a good weather glass is almost an infallible guide to the weather.

Most people have seen a weather glass in its various forms. Some are long glass tubes with mercury in them; others have dials with figures and words engraved upon them. The former class are called barometers and the latter aneroids. The aneroids vary in shape, some being circular while others resemble a banjo in form. But pay no attention to the words on the dial for they are usually misleading.

The weather glass only tells us the weight of the air. If the air becomes light the mercury falls or the pointer points to a lower figure. In the aneroid the changes in weight act on aluminium cylinders exhausted of air and by a suitable mechanism of levers these changes are transferred to the pointer.

The most useful form of the aneroid is the barograph. The principle is the same except that the changes in the weight of the air are recorded on a chart wound round a clock, thus giving a continuous record. Do not trouble about the figures on the chart. It is much more important to note whether the instrument shows slow or rapid changes in weight or pressure.

Our weather is associated with changes in the weight of the air. A falling glass shows that an area of light air is advancing. The weather experts call such an area a depression or cyclone or low. Cyclones bring bad weather because all sorts of air flows into them. They are Nature's mixing pots. Air from the north will be cold; air from the south will be warm, and it is this mixing which causes the rain, hail and snow also the changes of temperature. But the mixing in a cyclone is not ordinary mixing; it is the sliding of one air current over another.

If the cyclone is very intense, that is, when the glass falls rapidly, the winds will be strong and will most likely reach gale force. If it is shallow and the glass only changes slightly, moderate or light winds will prevail. Sometimes the glass will be falling rapidly and the weather is fair and quiet, but that is only the lull before the coming storm.

Anyone can forecast the changes in the weather by watching the glass and noting the changes in the wind. If the glass is falling and the wind "backs" or changes in an anti-clockwise direction, for example, from south to south-east, then rain will come. The reason is that a cyclone is approaching. The force of the wind will depend on how quickly the glass is falling. And it is easy to tell where cyclones are. This is the secret. Stand with your back to the wind and the cyclone, in this hemisphere, will be on the left hand.

But if the glass rises and the wind "veers" or travels clockwise, say, from south to west, then expect fairly showery and cooler weather. When the glass falls the weather becomes mild and rain is indicated; when it rises after a fall, then cooler and better weather results.

Chills and colds are caught during sudden changes in the temperature of the air. So if one knows that cold air will follow with the rise of the glass, it can be anticipated by changing one's attire when the glass is falling. In ninety cases out of every one hundred colds caught during a change of air temperature could have been avoided. *A. P. M.*

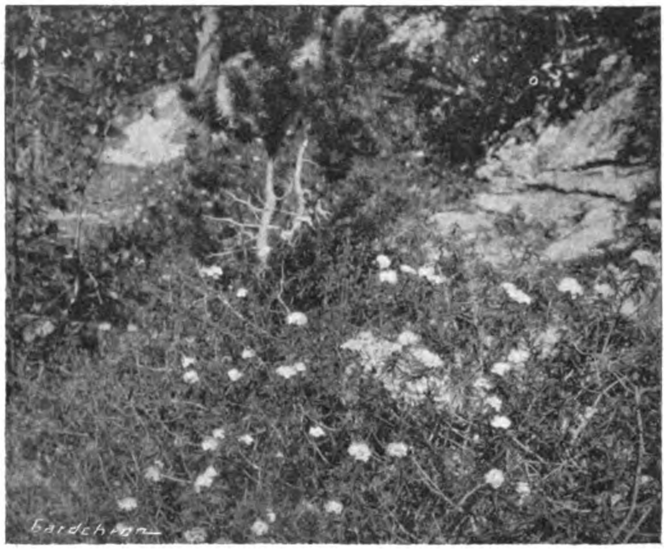

FIG. 172.—LEDUM GLANDULOSUM AND PINUS CONTORTA,
WHITE HORSE PASS, ALASKA.
(see p. 371).

FIRES CAUSED BY RAILWAY AND OTHER ENGINES.

THE law relating to the liability of railway companies for fires caused by sparks and cinders being thrown from their engines on to property adjoining their permanent way is set out in two Acts of Parliament—The Railway Fires Act, 1905, and the more recent Act of 1923. The former Act contains all the material points of law, while the Act of 1923 amends it to a certain extent, by bringing the maximum amount of compensation payable up to the modern values, and slightly altering the method of claiming.

If it were not for these Acts, it must be understood, a railway company—since it works its engines under statutory powers—could not be made liable in an action for the damage they do unless some negligence on their part could be proved. The Act of 1905, which is the principal Act, provides that a railway company is to be held responsible for any damage which is caused to agricultural land and crops by sparks or cinders coming from any engine being used on the railway, and the fact that the engine was being used under statutory powers is not to affect this liability.

The Act goes on to provide, however, that the maximum amount of damage that a railway company can be compelled to pay is £200 (under the Act of 1905 it was only £100).

I mentioned above that the damage must be done to "agricultural land or agricultural crops." What does this expression include? Section 4 of the principal Act says that the expression agricultural land includes "arable and meadow land and ground used for . . . . market or nursery gardens, and . . . orchards and also includes fences on such lands, but does not include . . . buildings." The section goes on further to explain that agricultural crops include any crops on the agricultural land. From this it will be seen that an ordinary private garden does not come within the Statute and if a private owner wishes to claim successfully for a fire caused by a railway company's engine, he must bring evidence to prove that there has been some negligence on the part of the Company. This is no easy matter, but it might be accomplished if it could be proved that the engine which caused the fire was out of date or inefficient or that a defective fire or spark gauge was in use at the time. Similarly, no action can be brought for damage done to other kinds of private property or for personal injury, unless negligence can be proved.

The way in which compensation must be claimed, and the notice which must be sent to the railway company have also been amended by the Act of 1923, and now in order that a claim for such damage may be in order, notice in writing of the fire having occurred, and of intention to claim in respect of it must be sent to the railway company within seven days of the occurrence of the damage, and in addition particulars in writing of the damage sustained, showing the amount of the claim, must be sent to the company within twenty-one days of the occurrence of the damage.

The Acts also give railway companies the right to enter on any land for the purpose of putting out or stopping the spread of a fire caused by one of their engines, and further they may, in order to prevent or diminish the risk of fire in a wood or orchard, take any precautions reasonably necessary for preventing it spreading; provided they do not cut down or injure any trees, bushes or shrubs without first obtaining the consent of the owner to do so. If the company does exercise these powers it will have to pay full compensation to anyone who is injuriously affected by their doing so.

In the case of other engines, such as those drawing fair and circus processions, their owners may be made liable for any damage they may cause by sparks and cinders, to property adjoining the highway, and even in the case of steam rollers which are being used by local highway authorities, the fact that they are being used to carry out a statutory duty does not exempt them from liability, as was decided in the High Court last year, when a rural district council had to compensate the owner of a thatched cottage which sparks from one of their engines had set alight. In the case of engines other than railway engines the liability does not extend only to agricultural land and crops, but to any property they may damage. *Harold Sharman.*

THE NUTKA BAY BRAMBLE.

As one travels northwards up the Pacific coast of America, setting aside the ubiquitous Conifers, there seems to be an ever increasing preponderance of trees and shrubs with white flowers. In Vancouver Island, however, there is plenty of colour, not only amongst the lowly herbs, which are as bright as they are beautiful, but also along the hedgerows and by the forest's edge. It must be admitted that some of the grandest are alien importations from the Old Country, and in the vicinity of Victoria the Broom and Briar, already rampant and out of control, fill the landscape in summer with their gold and pink. But the native Roses are there also, the prettiest and commonest being the sweetly-scented Rosa nutkana, with its porcelain-pink blossom; then there are the rich purplish flowers of the Salmon Berry (Rubus spectabilis) enlivening the stream sides, while everywhere, threaded through the thickets, one sees the fiery orange of the Red Honeysuckle (Lonicera ciliosa).

It is true that some of these, under the benign influence of the Japan Stream (which is the equivalent of our Gulf Stream in this part of the Pacific) have crept up the coast so far as Alaska, but their numbers seem to dwindle the further north one goes. These, at any rate, were the impressions I formed during my short three weeks on the coast. One cannot help asking is there any correlation between sunshine and colour? Under the sombre skies of the higher latitudes it is quite conceivable that white flowers have a greater attraction to insects, and are therefore more serviceable to the plants than coloured ones. Be this as it may, throughout Alaska the white blossom of the Nutka Bay Bramble (Rubus nutkanus) and the snowy bracts of the dwarf Cornel (Cornus canadensis) are everywhere conspicuous features of the underwoods, while in all the peaty bogs the so-called Labrador Tea (Ledum glandulosum) flaunts its creamy-white umbels (Fig. 172).

With me, the Nutka Bay Bramble ekes out a precarious existence in an overcrowded shrubbery and is there a plant of small merit. But now that I have seen it growing in the rich, moist humus of its native land, I can no longer be lukewarm in my praise. The broad, three- or five-lobed leaves, massed in luxuriant groups, are very effective, and are in themselves a sufficient recommendation to grow this Rubus, but when they form a dark green background to numerous clusters of big, pure white flowers, each two to two-and-a-half inches across, the result is entirely delightful (Fig. 173). The domed-shaped fruits of this thornless Raspberry have given it the colloquial name of Thimbleberry; although these are edible, they are unattractive, aenemic in colour, and of rather insipid taste. I saw this shrub at its best near Wrangell, and nowhere, I think, were its flowers quite so large or handsome as in the vicinity of this old Alaskan settlement. *Collingwood Ingram.*

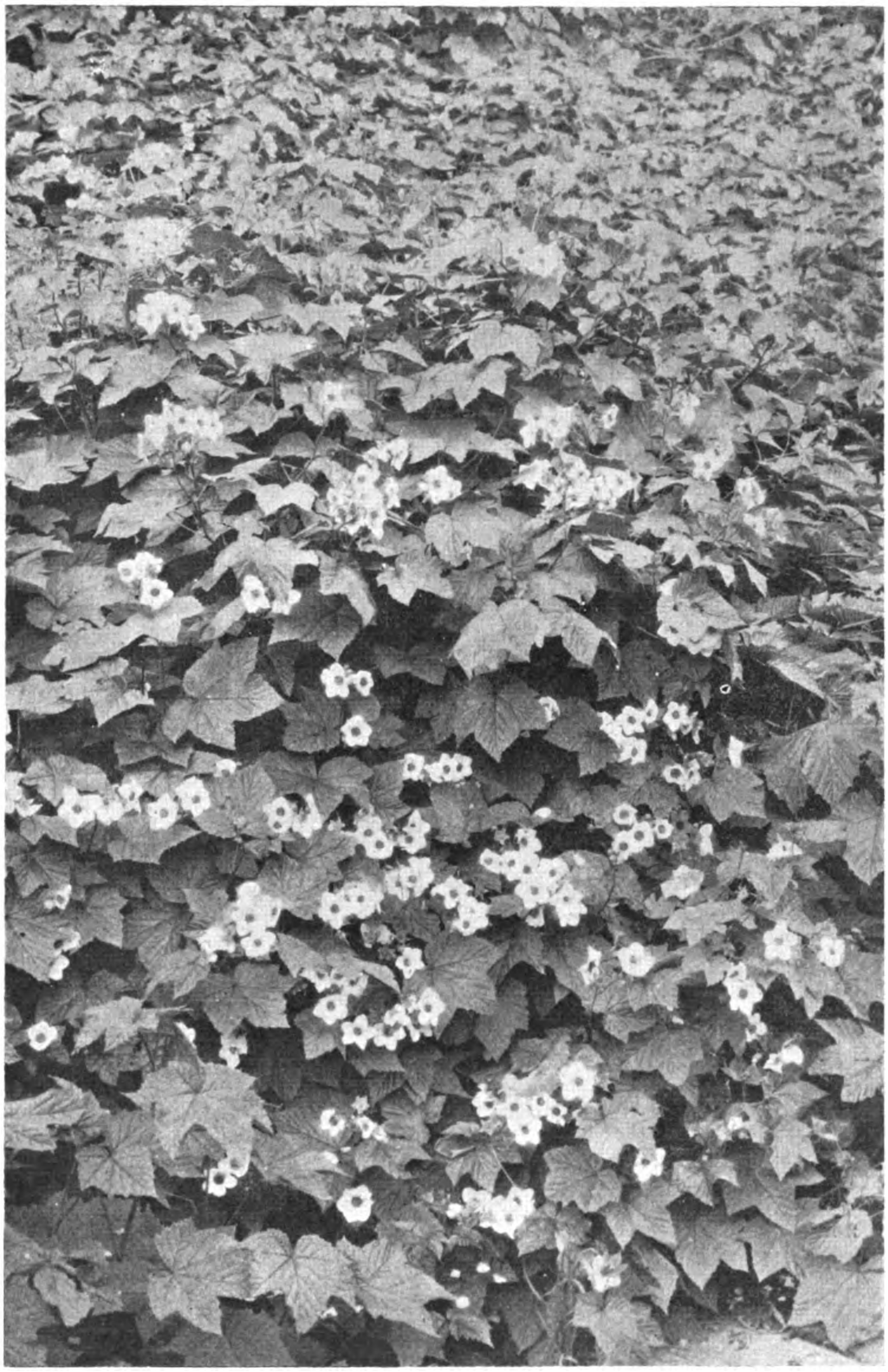

FIG. 173.—RUBUS NUTKANUS IN ALASKA.

TREES AND SHRUBS.

TRANSPLANTING EVERGREEN TREES.

THE article on transplanting in *Gard. Chron.*, October 2, p. 261, is of special interest to gardeners, to whom the loss or otherwise of newly-planted subjects mars or augments the grower's reputation.

Experience teaches that autumn or even winter planting is better on warm, well-drained soils than planting in spring, because new roots are formed at once and they keep the young foliage in spring supplied with sap so that the trees are able to withstand the drying effects of wind and sun. On heavy soils, however, spring planting is best, as in the autumn and winter the soil is too wet and cold to favour sufficient root-action, with the result that the young foliage is weakened and succumbs to the drying spring weather.

On cold soils, the natural stimulus of spring growth will force a plant to make new roots, whilst the ordeal of wind and sun on the foliage will be counterbalanced by the moisture and lower temperature of the heavier soil, thus aiding the rootlets to accustom themselves to their new conditions with the gradual rise in soil temperature.

The following notes tend to emphasise the above conclusions:—During January, 1925, a hedge of Yews, six feet tall, several Cedrus Libanii, four feet high, a large Cedrus atlantica glauca, and another Yew hedge, four feet high, were planted. The soil is light and stony with a gravel subsoil. Only one tree died, a Cedrus Libanii, and the remainder grew away freely soon after planting.

During the winter of 1923-4 numbers of Cedrus Deodara were planted in cold, wet soil, others were planted in spring on a light, sandy soil and all died.

I have no doubt had the time and conditions relating to the Deodars been reversed the trees would have had a better chance of living. The experiment with the Lawson Cypresses mentioned in the leading article referred to seemed to be hardly fair on the spring-planted trees. They had already been lifted in the autumn and laid in, where they probably made new roots.

These roots would be disturbed again in the spring planting and so the trees had a double check.

Perhaps a different result would have been obtained had they been transplanted in spring direct from their original home. I think the most important thing of all, whether in autumn, winter or spring planting, is the careful spreading out of the root ends as the work proceeds, working in prepared soil, afterwards watering the latter and firmly staking the trees. It is the practice of some growers to plant trees with the roots still encased in the sacking as received from the nursery. Correspondence on this point would be interesting. Personally, I think this an unwise proceeding, for the root extremities must be doubled up in all directions, and as the sacking rots the rootlets are unable to gain a firm hold on the soil.

It was reported in the Press recently that Queen Mary, when planting a tree with the sacking around its roots, asked: "Will it grow?" A very natural question.

No doubt this particular tree will receive every care and attention, but is it advisable to retain the sacking when planting in the ordinary garden? *R. Gardner.*

SHRUBBERY HYPERICUMS.

Hypericums of a shrubby nature are of great value in the garden during late summer and autumn. Their chief value is that they come into flower when most of other shrubs are over, and by planting a few selected varieties, they extend the flowering period of this desirable form of gardening for a considerable time. Being plants with light, graceful foliage, they should always be arranged in groups, as by doing so they give fine effects during summer, with the masses of blue-green foliage. They are of the easiest cultivation, and all will thrive in a loamy soil with plenty of moisture. Most of them produce seeds from which plants may be raised for flowering in two years, or they may be increased from cuttings, taken during August and inserted in pots of sandy soil, and rooted in gentle heat

Certain varieties are inclined to be killed to the ground level during a hard winter, but throw up strong growths from the old stool, which produce an abundance of flowers during late summer. The annual pruning required is best done in spring after all likelihood of damage by late frost is past, cutting back the former year's growth and removing old, exhausted branches.

Amongst species that are well worth planting is Hypericum Hookerianum. This native of the Himalayas grows from five feet to seven feet high and is most valuable for its late-flowering, which is from August till October. If planted as a single specimen it is inclined to get bare at the base with age, therefore it should be planted in groups and renewed from seeds or cuttings as the plants become exhausted. The flowers are borne in terminal clusters, and only one or two open at one time; they are about two inches across.

Hypericum lysimachioides is a dwarf-growing species and more likely to be damaged by severe frosts. It has pretty, ovate, pointed leaves which are glaucous underneath. The bright golden yellow flowers are produced with great freedom.

Hypericum patulum, also a dwarf shrub, is liable to be cut back to the ground level, from which it sends up strong shoots, from one-and-a-half foot to three feet high. This species flowers from July to October. The variety Henryi is hardier than the type, has larger leaves and flowers, and is a most desirable plant to grow.

Hypericum patulum Forrestii is one of the gems of the family, owing to its free-flowering during August, and the brilliant autumn colouring of the foliage. Groups of this Hypericum in the shrubbery during autumn receive the admiration of all, and no collection of shrubs is complete without it. The plant is easily raised from seeds which are freely produced. Even young plants raised from seeds sown during spring are clothed with their mantle of colour the first autumn. *F. W. G.*

INDOOR PLANTS.

RUELLIA MACRANTHA.

This autumn-flowering, warm greenhouse plant forms a bush several feet high bearing at the apices of long, fleshy stems, in the axils of somewhat crowded lanceolate leaves, five-lobed flowers, two inches in diameter. The tube of the rose-coloured blooms is veined with dark rays and splashed with a cream-coloured blotch. The opposite leaves clothing the lower portion of the stem are more widely spaced than those above.

It is an easily-grown subject, thriving in an ordinary light compost. Yearling plants may be flowered in pots five inches in diameter. If larger specimens are required they may be placed in seven-inch pots and grown on for a second season.

Cuttings should be inserted in heat in January, and the young plants, if potted into five-inch pots in June, will commence to flower at the end of September.

JACARANDRA MIMOSAEFOLIA.

The note on this plant on p. 306 will remind old plantsmen that it had, at one time, a considerable vogue as a table plant, well-feathered specimens suitable for the purpose being priced at half-a-guinea each.

With age the plant becomes bare at the base and it was but seldom grown to a flowering height. In its native Brazil at the season of flowering, the wooded slopes appear as if enveloped in a cloud, so profuse is its blooming.

As regards propagation, in addition to cuttings as mentioned by your correspondent, it may be raised readily from seeds. We have rooted the young growths from cut-back plants in early spring, and grown them alongside seedlings. By the end of summer one could not pick out the seedlings from plants raised from cuttings. *F.*

LEONOTIS LEONURUS.

This handsome South African Labiate makes an excellent pot plant for the embellishment of the greenhouse during the autumn and early winter. In certain favoured localities in the extreme south-west of England it is hardy and blooms profusely in the open, but under less clement climatic conditions protection must be afforded the plant during the winter.

It is an erect-growing plant, producing its bright, orange-coloured flowers freely in dense, axillary whorls, there being a considerable space on the flowering stem between the latter, and as the whorls open successively the period of flowering is lengthened by picking off the faded blooms. The green calyces, which remain attached, do not detract from the decorative value of the plant. The propagation and cultivation of this exotic are comparatively easy; cuttings of the young shoots strike readily in spring or early summer. The young plants should be pinched to encourage a bushy habit, and treated during the summer in much the same manner as Chrysanthemums. When taken indoors in the autumn, they should be placed in a light, airy position. *T. H. Everett.*

ORCHID NOTES AND GLEANINGS.

DENDROBIUM DEAREI AND D. ATROVIOLACEUM

Different Orchids are useful for different purposes; some provide a display of rich colouring, others because of their size are used for coat flowers; some attract by reason of their grotesque form, while others deserve recognition by reason of the length of time they remain in bloom..

Dendrobiums are not noted for the last quality, but D. Dearei and D. atroviolaceum are exceptions to the rule; their flowers will last in beauty from three to four months, and if grown in sufficient quantity will go a long way towards making a house gay throughout the greater part of the year, as the plants flower at different periods.

Although coming from quite different localities they succeed under precisely similar treatment. They delight in warm conditions the whole year round, grown in small receptacles, in an open, fibrous mixture, and even when at rest should not be allowed to suffer from lack of water at the roots, whilst the other extreme should be carefully guarded against. Both are evergreen plants and have the advantage of beautiful foliage to show up their flowers.

Dendrobium Dearei was introduced in 1882, and was described in *The Gardeners' Chronicle*, XVIII (1882), p. 361. It is a robust plant producing stems up to twenty-four to thirty-six inches long, clothed with leaves of a most beautiful green, which are persistent for about two years. The flowers, which are white with a pale yellowish-green transverse zone in the lip, are freely produced, and will last fully three months. The species commences to open its blooms in July, and strong, well-grown plants are rarely without their handsome flowers. D. Dearei is abundant on several of the small islets off the north-east coast of Mindanao: but it has not been imported for some considerable time.

D. atroviolaceum was introduced from New Guinea, and flowered for the first time in Europe in 1890. It produces its flowers in the early months of the year, and these last over a considerable period. The sepals and petals are cream-yellow, with numerous dusky-brown spots, and the strongly three-lobed lip is deep violet-purple, with some dull green markings outside. The flowers have a somewhat pendulous habit, so that the richly-coloured lip is best seen from underneath. This species is easily procurable, having been imported recently, and there is considerable and interesting variation in the size and colour of the flowers of different plants. *J. T. B.*

NOTICES OF BOOKS.

The Flora of South Africa.

After a delay of eleven years, caused by the war, the further publication of Dr. Rudolf Marloth's sumptuous work has now been resumed by the issue of Vol. II (in two sections), Volumes I and IV having already been published, leaving only Volume III, and possibly a supplement, to follow and complete the work. In its complete form this splendid *Flora* will doubtless in future become of considerable rarity, as it unfortunately happens that no more complete copies of volumes I and IV can be obtained, as the whole of the unsold stock of the beautiful plates of these volumes was destroyed by a fire at the warehouse in which it was stored. The letterpress, however, was saved, and the 472 pages comprised in these two volumes is now issued bound in one volume, containing 171 figures in the text, and offered at the reduced price of two guineas by the publishers, Messrs. Weldon and Wesley, 2-4 Arthur Street, New Oxford Street, London, W.C.2.

This grand work is quite different in character from all other Floras. It does not aim at being a complete illustrated *Flora of South Africa*, for many volumes would be needed for that purpose; its scope being to deal briefly but clearly with all the natural Orders of plants found in South Africa, giving keys to them and the genera, with figures and brief accounts of some of the species belonging to the commoner or more remarkable genera. It is profusely illustrated with charming coloured plates, reproductions of photographs showing the manner in which the plants grow naturally, and sketches of floral and other details.

Volume II is larger than either Volume I or IV, and as it would be rather bulky if bound in one volume, it has been issued in two sections, each with an index. Altogether it contains 272 pages, 52 coloured and 28 uncoloured plates, and 162 figures in the text. The price is five guineas or £2 12s. 6d. for each section.

This flora is a very fascinating one to the lover of plants, not only on account of its beautiful illustrations of the wonderful plants that find their home in South Africa, but also for the clear explanations of interesting details that are often given concerning peculiarities of structure and habit, water storage and other means of resisting drought, agents of fertilisation, distribution of seeds, poisonous species, and uses made of various plants, etc.; many of these notes being original observations made by the author and which cannot be obtained from any other source.

As an example of some of the interesting observations recorded in the volume just published, a portion of the account of the genus Roridula may be quoted. This strange but beautiful shrubby genus used to be included in the order Droseraceae, because its leaves are provided with stalked, insect-catching, glands, similar to those of Drosera, but Dr. Marloth has now removed it from that Order and placed it in a separate Order by itself (Roridulaceae) on account of the very different structure of its flowers and fruit. After explaining that the insects captured by the plant are not digested by the glands as they are by the glands of Drosera, but are fed upon by a species of crab-spider (Synaema sp.) that makes its home among the dead leaves which remain on the plant, he states that "as soon as the vibration of a twig betrays the presence of an insect, the spider pounces upon and kills it." The author then goes on to explain the curious and possibly unique adaptation for the dispersal of pollen found in this genus. Dr. Marloth states: "Another remarkable adaptation of insects to a special mode of life is shown by a group of Hemiptera, viz., two species of *Pameridea* (Capsidae). As stated above, the anthers of Roridula are irritable. In the bud and in flowers which have not been visited by an insect the anthers are turned downwards and appressed to the filament, the swollen bases of the five anthers forming a circle around the style, which at this period is shorter than the filaments. The swollen portion of the anther contains sugar in its inner tissue, and when it is pierced by an insect the whole anther instantly swings round into an erect position, scattering the pollen through the apical slits. When we first observed this apparently unique mode of ejecting the pollen, which obviously depended upon the co-operation of an insect, we were naturally puzzled to understand how insects could venture into a flower around which the viscid glands of the projecting sepals would be such a serious danger to their safety. However, the difficulty vanished when we saw the little Capsid running over the leaves and entering the flowers as if no viscid varnish existed."

The work is printed in large, clear type and is admirably executed in every respect. No one can look through its pages without feeling how very helpful it would be to any one desirous of knowing what the flora of South Africa is really like, or for naming many of the plants found there, while the European horticulturalist will find pictured in it a host of plants in cultivation. The author is to be congratulated on the efficient manner in which he has performed his task of producing this unique book, for the collecting of the material from which the coloured plates were made, together with the sketches and photographs (many of which were taken by himself) must have involved several years of labour and wide travel.

The only imperfection in the work noted, is that the keys to the Orders are scarcely adapted to the use of the amateur botanist. On page 27, by some oversight, the pistil of the family Roridulaceae is described as being apocarpous, whereas it is syncarpous. *N. E. Brown.*

AN "EYE" ROT OF PEARS.

During the season 1926, Fertility Pears were found rotting at the calyx end in an orchard of Pears containing different varieties. This "Eye" rot, which is similar to the "Eye" rot of Apples (see Fig. 174), was observed in two cases in the previous season, one in an orchard at Wisbech, and the other near Cambridge.

The "Eye" rot of Pears is in every way comparable to the "Eye" rot of Apples, and is due to the same fungus.

Attention is drawn to the potentiality of this disease in reducing Pear and Apple crops. In the present season a case was noted where Worcester Pearmain Apples (this is a variety which is very susceptible) were severely attacked insomuch that of a total bulk of five tons, one-and-a-quarter tons were rendered unmarketable through this disease.

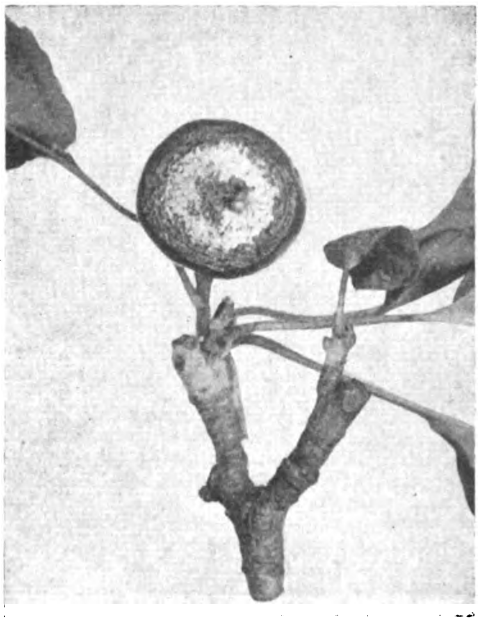

FIG. 174.—"EYE" ROT ON WORCESTER PEARMAIN APPLE.

The fungus responsible for both these diseases is the Apple Canker fungus (Nectria galligena, Bres), and it is the conidial stage of this, Cylindrocarpon mali (Allescher) Wr., – Fusarium Willkommii, Lindau, which brings about this rot of the fruit. The winter, resting, or perithecial stage of the fungus, as with Apples, is not found on the fruits in the current season, but if the fruit remains on the tree producing "mummies," these may bear perithecia. Such perithecia have been found on shrivelled Worcester Pearmain Apples in March, and also have been noted in the same month on shrivelled Pears.

Symptoms of the Disease.—Fruits generally start rotting at the calyx end, the top of the Pear then slightly flattens, becoming more so as the disease progresses. The skin and flesh of the affected fruit is brown. Small, raised pustules of the canker fungus appear, these are of a dirty white colour, with sometimes a tinge of pink.

Prevalence.—The disease is recorded from Denmark, Holland and Germany.

Susceptibility of Varieties.—"It is interesting to note that in Denmark the Apple variety Signe Tillisch; in Baarn, Holland the President of England Apple; and in England the Fertility Pear, and probably a few other Pear and Apple varieties are some exceptions to the rule that the canker organism Nectria galligena usually does not rot the fruit. In German varieties of Apple and Pear the Nectria fruit-rot does not seem to occur to any extent, although my first finding of its conidial stage was in the endocarp of an Apple at Dahlem, as published in Grundlagen, 1910, p. 174, under Fusarium Willkommii Lindau, and in *Phytopathology*, 1913, p. 226, under Cylindrocarpon mali (All.) Wr." (Dr. Wollenwerber *in litt*).

It has been noted above that Worcester Pearmain Apples are also more susceptible than others.

Finally, the writer wishes to thank Dr. Wollenwerber, who prepared two series of pure cultures on about twelve media, which enabled him to confirm this "Eye" rot of Pears as being due to Cylindrocarpon mali (Allescher) Wr., the conidial stage of Nectria galligena, Bresadola, and also to Miss Wakefield for her confirmation. *W. A. R. Dillon Weston, M.A., Cambridge.*

NOTES FROM ABERDEEN.

In the year 1851, a great exhibition was held in London and is now a memory only to a few. In the same year Tricyrtis hirta was introduced to British gardens and is with us still. It is a half-hardy perennial belonging to the Liliaceae, and is a native of Japan. The flowers are axillary, white, with purple blotches, but nevertheless, quite attractive. The plant reaches a height of between two and three feet. In favoured districts it may be planted out-of-doors in a sheltered border, and should be protected during severe weather. In these latitudes it is better to give it greenhouse treatment, when it may be had in flower from September until the end of October. Another useful and widely cultivated bulbous plant for flowering during September and October is the old Scarborough Lily (Vallota purpurea), a native of South Africa. Its scarlet flowers, carried on stout stems up to two feet in length, make a welcome splash of colour in the greenhouse during those months.

The Rutaceae furnishes us with an interesting member now in flower in the form of Boenninghausenia albiflora. It does well planted out in a bed in a greenhouse, where it will reward the cultivator by producing a fine display of dainty, small, white flowers on long, slender stems. The plant will also grow outside quite well, given a little shelter, although frost is apt to bring its flowering period to an abrupt conclusion.

Known by the popular name of the Madeira Vine, Boussingaultia baselloides is, nevertheless, a native of Ecuador, from which country it was introduced in 1835. It is a half-hardy, tuberous-rooted climber attaining a height of six to eight feet, and producing a quantity of heads of white flowers during October. Here a stove temperature would appear to suit it even better than a greenhouse one. Quite a good display of flower is afforded by two species of Osbeckia, a genus of shrubs belonging to the Melastomaceae. This Order supplies us with a number of valuable ornamental plants for the stove and greenhouse, and the Osbeckias are worthy members of the tribe. They produce large, rosy-purple flowers carried in the axils of leaves at the extremities of the current season's growths. The two species we have here are O. stellata and O. crinita.

There are two succulent plants worth mentioning, now in flower. The first is Lenophyllum pusillum, with brownish-grey foliage and yellow flowers carried on stems of a similar character. The second is Crassula Bolusii, a small species with light-green foliage, marked with darker green. The small white flowers are carried on stems scarcely an inch in length. The species is best grown in a flat, shallow pan, as in this way the foliage is most attractive.

Out-of-doors the flowering of Gentiana Pneumonanthe is worth recording. Our soil is

HOME CORRESPONDENCE.

[The Editors do not hold themselves responsible for the opinions expressed by correspondents.]

Old-time Chrysanthemums.—Mr. Arnold's interesting retrospect on p. 326, probably awoke many memories of old times in others besides myself. I grew nearly all the sorts he mentions, but wonder why he omitted Viviand Morel, which I always thought the greatest stride made by any one variety. It was, however, his last remark on the advance in artistic exhibiting which moved me to send you a reminiscence. Some forty years ago I ran one of the best trade shows in the country and posed as somewhat of an expert. At that time I gave a lecture in Nottingham which then, as now, had one of the strongest circles of growers existing. At the end of the lecture on Chrysanthemum culture, I put in a strong plea for a more artistic style of exhibiting, at least for a part of the exhibits. The audience barely heard me to the finish, and at question time—well I just escaped with my life!! Times change. *Chas. E. Pearson.*

——I was much interested in the article on p. 326 by Mr. Ralph E. Arnold, on old-time Chrysanthemums. I have been engaged in Chrysanthemum growing for many years and still grow many old favourites for I find them still good enough for ordinary greenhouse displays. I would not, however, class them with present-day varieties, for in many cases their habit is against them. I remember a time when I grew for exhibition, having General Hutton quite nine feet six inches in height. There are still some excellent varieties that grow to a great height, but unless one has a lofty structure to show them off they are not desirable for cultivating. One variety I have here was raised about twenty-two years ago, I believe, by Mr. Martin Silsbury, *i.e.*, J. H. Silsbury: it makes an admirable plant, and with me still retains its size and constitution. I still grow Nellie Pockett and can rely on good specimen plants of this variety whilst F. S. Vallis holds its own amongst the more select moderns. I find this variety is very apt to lose its foliage. Dealing with habit, I have this season David Lloyd George on second crowns over eight feet high, but beautiful blooms of fine colour. I should like to know the views of growers of old and modern Chrysanthemums; it should make interesting reading. Whilst we now have great size in our flowers, I do not think we have the old-time quality or colour. This seems very much pronounced in the incurved section, of which C. H. Curtis is an example of a true incurved variety. Singles would seem to be the exception, for rapid strides have been made with this section since its introduction. I have spent many hours in tying and training such varieties as Miss Rose and Ladysmith. To refer back to the Japanese section, I saw a few days ago an amateur's collection containing many old varieties growing side by side with more recent introductions, such as Mme. Paolo Radaelli and its yellow sport Mme. G. Rivol, Bessie Godfrey, Godfrey's King and Lady Hanham. All had received good average cultivation, but seemed out of place with varieties of the Majestic and Mrs. R. C. Pulling type. *C. Malpass, Birchwood Grange Gardens, Penylan, Cardiff.*

Primula farinosa.—The Bird's Eye Primrose is one of the daintiest and prettiest of our native alpines, its colour ranging from pure white to a deep rose-pink. Owing, in the main, to wrong treatment, it has a bad reputation and is not cultivated in rock gardens to the extent that it should be. Two years ago, as an experiment, I tried plants under the three following conditions: in an open border, in moderately moist soil and in a bog. Under the two first the plants are healthy and flower freely, but under the latter they are very poor and few flowers are produced. Given a fairly heavy loam and good drainage there should be no difficulty in growing P. farinosa, while, as to atmosphere, my garden is half-a-mile from the centre of Newcastle-on-Tyne. *J. W. Watson, Walter Terrace, Fenham, Newcastle-on-Tyne.*

SOCIETIES.

IMPERIAL FRUIT SHOW.

October 29 to November 6.—The Imperial Fruit Show was held on these dates in Holland Park Hall, London. The exhibition has resolved into a purely trade show and has the support of such Government departments as the Ministry of Agriculture and the Empire Marketing Board and the Department of Overseas Trade. The Governments of Canada, Australia, Union of South Africa and the British West Indies gave the show valuable support, and on this occasion the Royal Horticultural Society contributed one of the best displays it has ever made outside one of its own shows. This was an exhibit of fifty varieties of Apples and Pears decorated with fruiting sprays of Berberries. The Ministry of Agriculture had a stand exhibiting research in fruit-growing at East Malling, Long Ashton and Campden Research Stations. The Empire Marketing Board and the Department of Overseas Trade had one of the largest stands, which included exhibits from Canada, principally Apples; from Australia, which comprised Sultanas, Raisins, Currants and canned fruits; from the Union of South Africa, in which Citrus fruits were prominent; the British West Indies, which also showed Citrus fruits as well as Bananas and preserves; and the Gold Coast, which displayed Oranges, Grape Fruits, Limes, Pineapples, Bananas and Ground Nuts.

The show was opened by the Rt. Hon. Walter Guinness, M.P., Minister for Agriculture and Fisheries, who was introduced by Mr. W. P. Seabrook, Deputy-Chairman of the Committee. Mr. Seabrook stated that these shows had proved of great benefit to growers all over the Empire, and the Committee was endeavouring to put the exhibition on a permanent basis. The Rt. Hon. Walter Guinness stated that he was sure these exhibitions were of value to the home-grower as well as the overseas producers. He regretted to know that three-quarters of our fruit imports came from other sources than our Empire. The great value of these shows was to enable our growers to study the best methods of packing and grading. Research Institutes were receiving government support in helping to solve problems dealing with diseases and pests, plant-breeding and in methods of cold storage.

The Rt. Hon. W. G. S. Gorby-Gore, Under-Secretary for the Colonies, stated that we import £50,000,000 worth of fruit a year, and only one-quarter of the amount came from the overseas dominions and the colonies, yet our own Empire could supply us with fresh fruit all the year round.

Judging occupied a long time, and it was very late on the opening day before the winning cards were all attached; moreover, the use of exhibitors' numbers on the cards giving the points awarded to each exhibit entailed repeated reference to the catalogue and was confusing to visitors.

Competitive Classes.

The first three sections of the schedule were (*a*) Kent and Southern Counties; (*b*) Eastern and Northern Counties including all counties in Scotland; and (*c*) West and Midlands. In each case there were thirteen classes for Apples viz.: (1) Four boxes of Cox's Orange Pippin: (2) four boxes of Worcester Pearmain; (3) four boxes of any other market dessert variety; (4) four half-sieves of Cox's Orange Pippin; (5) four half-sieves of any other market dessert variety; (6) four half-barrels of Bramley's Seedling; (7) four half-barrels of Newton Wonder; (8) four half-barrels of Lane's Prince Albert; (9) four bushels of Bramley's Seedling; (10) four bushels of Newton Wonder; (11) bushels of any other market variety: (12) four boxes of Bramley's Seedling; (13) four boxes of Newton Wonder; (14) four boxes of any other market variety; (15) four boxes of Lane's Prince Albert.

The judging was by points for style and appearance; bulge and height of fruits at end; alignment; solidity and compactness, neatness in wrapping; uniformity of colour and size; best commercial size; edible quality; maturity; freedom from disease and pest; freedom from bruise and other damages; colour, skin, quality and finish.

In most classes the competition was very keen, sometimes only a quarter-point separating the first and second prize exhibits. The poor Apple crop in Kent and the southern counties was reflected in the few exhibits in this section. The best competition resulted in the Eastern and Northern section. The greatest number of exhibits was in the class for four bushels of Bramley's Seedling, in the Eastern and Northern section, in which fourteen competed. The number of points awarded are given in brackets.

Kent and Southern Counties Section.-The University of Reading was placed first for four boxes of Worcester Pearmain (71½ points); Messrs. M. H. Bowen and Sons, Knockholt, Kent, were awarded first prizes for four half-sieves of any other dessert variety with Baumann's Red Winter Reinette (74½); for four half-barrels of Bramley's Seedling (90); for four half-barrels of Newton Wonder (89); for four boxes of Bramley's Seedling (81½); and for four boxes of Newton Wonder (86¾); Messrs. S. Swinford and Sons, Hoath, Kent, excelled for four bushels of any other variety of culinary Apple, with Lane's Prince Albert (85); for four boxes of any other market variety of Apple with Peasgood's Nonesuch (78½); and for four boxes of Lane's Prince Albert (85½); Mr. S. W. Mount, Canterbury, won first prize for four bushels of Bramley's Seedling (92¾), and Mr. L. C. Garrett, Langworth, Berkshire, for four bushels of Newton Wonder (89¾).

Eastern and Northern Section.—Mr. H. Granger, Malden, Essex, won the first prize for four boxes of Cox's Orange Pippin (82½); and for four half-sieves of Cox's Orange Pippin (89); Mr. W. Lawrence Taylor, Galleywood, Chelmsford, excelled for four boxes of Worcester Pearmain (86½); Messrs. W. Seabrook and Sons, Ltd., Chelmsford, for four boxes of any other variety of dessert Apple, with King of the Pippins (85¼); for seven boxes of Newton Wonder (88¼), and for seven boxes of any other market variety of culinary Apple with Bismarck (88¾). Hollesley Bay Labour Colony showed best in the classes for four half-sieves of any other variety of culinary Apple with Chas. Ross (87¾): for four half-barrels of Newton Wonder (87); for four half-barrels of Lane's Prince Albert (92); for four bushels of Bramley's Seedling (95): and for four boxes of Bramley's Seedling; any colour (93¼); Mr. F. E. Sandall, Wisbech, excelled in the class for four bushels of Newton Wonder (89¼). Mr. A. E. Morton, Wisbech, for four bushels of any other variety of cooking Apple with King Edward (91); and Mr. J. G. Faircliffe, Burwell, Cambridgeshire, for four boxes of Lane's Prince Albert.

The competition for four half-barrels of Bramley's Seedling was keen, amongst twelve exhibitors, and Mr. Cunningham's fruits won the special prize offered by Messrs. Abol. Ltd., the Silver Challenge Cup given by Messrs. Murphy and Son, Ltd., for the best exhibit in the United Kingdom Section; the Silver Challenge Cup presented by Messrs. John Gilray and Sons, for the best exhibit of Bramley's Seedling; the Challenge Cup offered by Messrs. McDougall and Yalding, Ltd., for the best four barrels of cooking Apples shown in this section; the Gold Medal of *The Fruit Grower*, for the best four half-barrels of Bramley's Seedling in the United Kingdom section; and the Gold Cup offered by Messrs. C. H. Deakin, Ltd., for the best Bramley's Seedling shown in the United Kingdom section.

West and Midland Section.—Mr. F. P. Norbury, Sherridge, near Malvern, won first prizes for four boxes of Cox's Orange Pippin (77½); for four boxes of any other dessert variety with Jonathan (80¾); for four half-sieves of Cox's Orange Pippin (88½); for four half-sieves of any other dessert variety with Allington Pippin (84) for four boxes of Bramley's Seedling (92½); for four boxes of Newton Wonder (90); and for four boxes of Lane's Prince Albert (89½); Mr. J. Moreton, Newent, Gloucestershire, excelled for four boxes of Worcester Pearmain (82½); Eardiston Farming Co., Ltd., Stockton, Worcester, for four half-barrels of Bramley's Seedling (92¾); for four bushels of Bramley's Seedling (89½); for four bushels of any other culinary variety with Lord Derby (86¼); and for four boxes of Lord Derby. Messrs. B. Bamford and Co., Evesham, excelled in the class for four bushels of Bramley's Seedling (95¼).

Small Growers.—In this section there were five classes; only two boxes, etc., of each exhibit were required. In some cases the first prize was not awarded. The most points were awarded for Bramley's Seedling, the first prize being won by Mr. W. H. Piper, Combe Martin, for two boxes of this variety (82), and the first prize for two half-barrels of this variety by Mr. C. W. Darling, Wisbech (89).

Overseas Section.—In the Overseas Section was to be seen the most rosy Apples in the Hall and, of these, the many boxes of the variety McIntosh were supreme. The general standard of excellence with this handsome dessert Apple was very high. All the fruits were of such even and regular size as though each was formed in the same mould. The many boxes of Jonathan were also of admirable appearance, but this variety lacks the delicious aroma which was yielded in a marked degree by McIntosh. The variety Snow was also of delightful colouring. Golden Russet was another particularly good class; most of the boxes were of fruits perfect in size and evenness. The Associated Fruit Growers of British Columbia were particularly successful in this section.

The British Empire Section was not so well contested as was the case last year, and it was chiefly filled with exhibits from Overseas. The first prize dozen boxes of any dessert Apple proved to be of Jonathan, shown by the Associated Growers of British Columbia. These were of especially high quality. All the exhibits in this class received maximum points for size and for maturity. Rome Beauty, also shown by the British Columbia Associated Growers, was the best in the class for a dozen boxes of culinary Apples. The fruits were of such excellence that ninety-eight points were awarded. For delicacy of scarlet colouring they were superior to any other Apples in the show. The variety McIntosh was placed first with 91¼ points in the new class for seven boxes of any dessert Apple, and Spy, with 84¾ points was second. In the other new class, for a similar number of boxes of any culinary variety, Greening, shown by Mr. F. Temmett, of Ontario, was first.

NON-COMPETITIVE EXHIBITS.

The imposing stands of fruits, chiefly from our principal salesmen, were a splendid feature of the show. Immediately inside the hall there was a gargantuan basket filled with thirty-nine varieties of fruit produced in the British Empire. Then there was a pyramid built up of, it was stated, nine tons of Apples and Oranges, while next was a collection of over twenty thousand bottles of fruits.

Such exhibits as these above-named dazzled the visitor by their sheer magnititude, and maybe the superb quality of their component parts escaped notice, but the most casual observer must have been impressed by the high quality of the produce which Messrs. George Monro, Ltd., displayed with such superb artistry. It was a beautiful exhibit. Palms and Crotons, perfectly grown; Chrysanthemums and Carnations, of first prize size and quality, and graceful little Heathers, represented the floral side of the display. The many baskets of Muscat of Alexandria and various black Grapes; the boxes of Cucumbers and Tomatos, Apples and Pears were all of the highest quality and, so that the public might realise that these were examples of the produce grown for market sale by our chief growers, who surely are the best in the world, their names and addresses were placed by the various consignments.

Amongst the most successful exhibits in the hall must be placed that of the Royal Horticultural Society which, by some, was accounted one of the very best exhibits the Society has ever made. Large branches of various Barberries, bearing enormous quantities of pendent bunches of brilliant berries, were arranged along the centre of a large table space. The tabling was covered with sprays of Cryptomeria japonica elegans, underneath smaller branches of Barberries, and amongst this delightful setting was placed an exceedingly extensive collection of Apples and Pears. The quality of the fruit was well worthy of our premier horticultural society. A great many comparatively little-known varieties were included, and the value of the exhibit was enhanced by the clearly written labels of each variety, stating its season. Pears seemed to predominate, and the many varieties included Nouvelle Fulvie, Emile d'Heyst, Beurré Jean van Geert, Gilogil, Pitmaston Duchess, Beurré de Jonghe, Doyenné du Comice, and Grosse Calebasse. Amongst the excellent dishes of Apples we especially noted Sandringham, Foster's Seedling, Wealthy, Warner's King, Royal Jubilee and Wolf River.

Another valuable exhibit was the miniature fruit garden of Messrs. W. Seabrook and Sons, Ltd. This was planted with standard, bush and cordon Apples and Pears, Gooseberries, Raspberries and Black Currants. In front, no doubt, to indicate the potentialities of such splendid little trees and bushes, was set a large number of dishes of Apples and Pears, perfect in size, shape and colouring.

Spray fluids and other chemical preparations, with various garden and orchard sundries, were also shown attractively. Messrs. G. H. Richards, Ltd., had their usual large stand, where they showed their valued "XL ALL" and other preparations, with a large assortment of syringes, cutting and cultivating tools, raffia and dyed flowers.

Sterole, both in powder form and as an emulsion, and their "Eclipse" brand of lime-sulphur, arsenate of lead paste, Bordeaux powder, potash Oleic soft soap, and many other fungicides and insecticides of proven value, were staged in attractive receptacles by Messrs. Bugges Insecticide, Ltd.

A good selection of washes, for destroying and preventing the attacks of capsid bug, aphides, winter moths, Pear slug, Raspberry beetle, Asparagus beetle and other pests, were displayed by Mr. M. Herrod. The Vermorel Knapsack sprayer, and other useful appliances, were exhibited by Messrs. Cooper, Pegler and Co. The Electric Hose and Rubber Co. had a large collection of hose for garden use, and there were many types of Slingsby's trucks, barrows and ladders.

Their well-known No. 1 and No. 2 washes, with arsenate of lead, Katakilla, Nicoter Sulphinette, a valuable wash composed of lime and sulphur, with other noted preparations, filled the large stand of Messrs. McDougall and Yalding, Ltd.; Mortegg, a recommended winter wash; Alvesco, a cyanide fumigant for the destruction of white fly, and a cure for Peach leaf-curl were the chief exhibits of Messrs. Murphy and Son. Messrs. Reamsbottom and Co. had a very bright display of flowers of St. Brigid Anemones, grown from retarded roots.

The Science exhibits were contributed by the Ministry of Agriculture, the East Malling Experimental Station and from the Campden establishment of the University of Bristol. The chief subjects treated were various Rootstock Investigations, and the effect of aphis on the root and shoot development of Strawberries.

The Colonies were well represented at the show, and the arcade of the Empire Marketing Board was an attractive feature. In addition to the exhibits of dried fruits from Australia and ripe fruits of Apples, Oranges and Bananas from the usual colonies, the British West Indies set out good samples of Avocado Pear and Grape Fruits, while the Gold Coast showed Limes, Coconuts, in the husk, and Ground Nuts.

An extensive exhibit of the comparatively new method of packing Apples in 20 lb. boxes attracted a deal of attention, and the high quality of the Jonathan Apples was favourably commented upon.

ROYAL HORTICULTURAL.

November 2.—There was a small meeting at Vincent Square on this occasion and a good deal of space was occupied with flower paintings, garden plans and photographs. The two large displays of Potatos were the principal exhibits, but Begonias, Chrysanthemums, hardy plants, trees and shrubs and Orchids were all shown in fair numbers.

The Orchid Committee recommended that a Silver Lindley Medal be awarded to Mr. J. E. Shill, who has charge of Baron Schröder's Orchids, in recognition of the race of golden autumn-flowering Brasso-Laelio-Cattleya he has raised.

ORCHID COMMITTEE.

Present: Sir Jeremiah Colman, Bt., (in the chair), Mr. Gurney Wilson (Hon. Sec.) Mr. Thos. J. Hanbury, Sir Frederick Moore, Mr. C. J. Lucas, Mr. R. G. Thwaites, Mr. T. Armstrong. Mr. J. C. Cowan, Mr. H. T. Pitt, Mr. A. Dye, Mr. J E. Shill, Mr. Stuart-Low, Mr. Charles H. Curtis and Mr. J. H. Smith.

FIRST-CLASS CERTIFICATE.

Brasso-Laelio-Cattleya Margery (*Hardyana alba × B.-L.-C. The Baroness*).—A gloriously beautiful hybrid that continues the fine succession of superb Orchids raised at The Dell. The flower is about six inches broad and the broad petals are rich yellow, orange tinted, the sepals being also yellow with a bright coppery tinge. The finely proportioned lip has a wide, frilled carmine margin and apex, with golden blotches and veins in the throat. Shown by Baron Bruno Schröder (gr. Mr. J. E. Shill), Dell Park, Egham.

AWARDS OF MERIT.

Brasso-Lælio-Cattleya Flavida (*B.-L.-C. Amber × L.-C. Golden Queen*).—Another splendid late-flowering, brightly coloured hybrid and somewhat similar to the former in regard to sepals and petals, but it has a smaller and less prominent frilled lip, this last named organ having a very deep carmine margin around a golden area and with orange-brown markings at the base of the throat. Shown by Baron Bruno Schröder.

Lælio-Cattleya Pamela (*C. Princess Royal × L.-C. Feronia*).—A large-flowered hybrid with dark purple sepals and petals and an elongated, frilled lip of deep crimson-purple hue. Shown by Messrs. Cowan and Co.

Brasso-Lælia Rex (*C. Rex × Brassavola Digbyana*).—This is a striking hybrid with big blooms of bright cream colour, tinged with pale green. Tho big lip is very fine, exquisitely fringed and with a deeper cream colour in the centre. This should prove to be a good parent. Shown by Messrs. Stuart Low and Co.

Brasso-Cattleya Alderman var. Mars. (*B.-C. Neston × C. Dowiana aurea*).—A showy hybrid bearing large flowers with rich mauve petals and sepals, and a deeper mauve lip that is frilled and has an orange-yellow central area with brown markings in the base. Shown by Messrs. Black and Flory.

GROUPS.

Messrs. Sanders' contribution included a large example of Dendrobium chrysanthum, flowering very freely and bearing a large number of golden flowers; Stenoglottis fimbriata, Angraecum Scottianum, Coelogyne speciosa albens, Oncidium Forbesii, Vanda Kimballiana, Bulbophyllum vitiense, Miltonia Bluntii and Cypripedium Fairrieanum, all very interesting plants that attracted a great deal of attention. Showy Cypripediums were C. The Baron, C. Dreadnought, C. Troilus var. G. Marshall, C. Idina, C. Priscilla and C. Antinous, while Cattleya Bellona, C. Prince John, and Laelio-Cattleya Luminosa aurea were handsome hybrids with yellow colouring.

A very bright group of well-grown plants was arranged by Messrs. Cowan and Co., who showed capital plants of Cattleya Daedalus—about a dozen examples; C. Fabianid (Fabia × Enid), Brasso-Cattleya Admiral Jellicoe, Laelio-Cattleya Pamela (C. Princess Royal × L-C. Feronia), of very fine form and rich purple colouring; L-C. Pandora, of yellow shades; Brasso-Cattleya Fusilier, cream coloured; and a few fine examples of such Cypripediums as C. Dreadnought, C. Fantasia, C. Cyril Lee, C. Actaeus var. Italia and the handsome C. Lucifer (Hera × Niobe) showing its Fairrieanum descent.

Messrs. **Charlesworth and Co.** had a modest exhibit on this occasion, and it included Oncidium varicosum Rogersi, Cattleya Elfin, C. Lord Rothschild var. alba, C. Fabia alba, Odontoglossum grande, and such interesting species as Restrepia maculata, Angraecum distichum, Cirrhopetalum ornatissimum, the rare Bifrenaria aureo-fulba and the old green-spiked Pleurothellis plumosa.

Messrs. **Stuart Low and Co.** showed the creamy-yellow Brasso-Cattleya Rex, the yellow Laelio-Cattleya Miss Medo, and the salmon-petalled Sophro-Laelio-Cattleya Anzac.

Floral Committee.

Present: Section A.—Mr. Henry B. May (in the chair), Mr. F. J. McLeod, Mr. Arthur Turner, Lady Beatrix Stanley, Mrs. Ethel M. Wightman, Mr. Hugh Dickson, Mr. Donald Allan, Mr. J. M. Bridgeford, Mr. M. C. Allwood, Mr. W. H. Page, Mr. D. Ingamells, Mr. A. E. Vasey, Mr. J. T. West, Mr. James B. Riding, Mr. W. B. Gingell, Mr. D. B. Crane, Mr. W. P. Thomson, Mrs. Helen Lindsay Smith and Mr. Charles E. Pearson.

Section B.—Mr. Reginald B. Loder (in the chair), Mr. T. Hay, Mr. L. R. Russell, Mr. Charles T. Musgrave, Mr. R. D. Trotter, Mr. G. Yeld, Mr. A. Bedford, Mr. Reginald Cory, Mr. F. G. Preston, Mr. E. H. Wilding, Mr. W. J. Bean, Mr. G. Reuthe, Mr. James Hudson, Mr. R. C. Notcutt and Sir William Lawrence, Bart.

Awards of Merit.

Chrysanthemum Augusta.—A large and very shapely Single. There are several rows of narrow florets which recurve attractively at the tips. The flowers possess more substance than is often present in this type. The eye is small and the colour is a bright yellow.

C. Everlasting.—A handsome Single of the best Mensa form, but considerably larger. The broad, substantial florets are of a glowing, velvety crimson colour. There is a narrow golden-yellow zone and the flowers have a small disc.

C. Thalia.—A splendid exhibition Japanese variety of large size and considerable attraction. The broad, dark chestnut florets, incurve at the tips showing a golden-buff reverse. The above varieties were shown by Messrs. **Keith Luxford and Co.**

Other Novelties.

Cotoneaster F. 11,190 "*Fire Fruit,*" 1917.—This, apparently, sub-evergreen shrub is somewhat similar in type to C. Simonsii, but the leaves are smaller, and the rounded fruits, which are slightly flattened at the sides, are very bright in colour. The attractive sprays were shown by Sir **Frederick Moore**, Willbrook House, Rathfarnham, Co. Dublin. **Dame Alice Godman**, South Lodge, Horsham, submitted in Nerine Alice a splendid variety which, for some reason, failed to impress the Committee. The flowers have broad, well-formed segments of a bright rose-pink colour.

Groups.

A whole length of tabling was filled by Messrs. **John Peed and Son** with well-grown plants of winter-flowering Begonias interspersed with occasional Palms and Codiaeums (Crotons). Although only the varieties Exquisite and Optima were shown, these Begonias made a very attractive display. The principal Codiaeums were shapely little specimens of the varieties Williamsii, Disraeli, Lord Balfour, Eugene Draps and Inimitable.

Dame Alice Godman, South Lodge, Horsham, showed a good collection of Nerines. None of the plants were named, but they were in good colours, such as rose-pink, scarlet, clear pink, purple, blush and white, and all were well-grown. Mr. G. J. **Kettle** had many bunches of Violet Princess Mary, a very good single variety.

Carnations of good quality were staged by Messrs. **Stuart Low and Co.**, Messrs. **Allwood Bros.**, and Messrs. **C. Engelmann, Ltd.** The first-named included especially good vases of Ruby Flow, Brilliant, scarlet; Sheila Green, yellow ground; Fancy and Eileen Low, pink. The chief varieties shown by the last-named were Zorro, an uncommon Fancy of heliotrope colour, splashed with brick red; Mrs. Hamilton Fellows, saffron, and Red Laddie. Messrs. **Allwood Bros.** included attractive vases of Dianthus Allwoodii, with Carnations Laddie, Spectrum, Shot Silk and Red Laddie.

A collection of well-grown Chrysanthemums was set up by Messrs. **Hewitts, Ltd.**, who showed Bertha Fairs, Edith Cavell and Rayleigh amongst the singles, and Rayonante, Blanche du Poiteau and La Pactole, Decorative Japanese varieties.

By the Orchid Annexe, Messrs. **L. R. Russell Ltd.**, had an attractive collection of Skimmias, Pernettyas, Crataegus Pyracantha Lalandei and other berried shrubs, with Ivies and Nardina domestica of rich autumn colour. The **Countess of Cawdor**, Frensham Hall, Haslemere, contributed an excellent collection of Pernettya muronata, showing good variation in the colouring of the fruits.

A small collection of late Roses, staged by Mr. J. H. **Pemberton**, included vases of Mrs. Henry Morse, Madame Jules Bouché, The General, Anne and Cornelia. The **Misses Hopkins** had a neat little rock garden set with appropriate plants.

An extensive collection of dwarf Conifers suitable for the rock garden was arranged by Mr. **George G. Whitelegg.** The following possessed bright yellow colouring: Juniperus japonica aurea, Cupressus (Retinospora) plumosa aurea, C. pisifera filifera aurea and Thuya occidentalis Rheingold. There were also shapely examples of Tsuga Sargentii pendula, Cupressus obtusa gracilis, Picea excelsa Doumetei and P. orientalis gracilis.

In a model formal garden, Mr. F. G. **Wood** had very shapely specimens of Cupressus Fletcheri, Thuya occidentalis Rheignold and surrounded the paving with Festuca glauca, while the whole exhibit was enclosed by a low hedge of Lonicera nitida. Topiary specimens were exhibited by Mr. J. **Klinkert** and Messrs. **Harrods, Ltd.**

As is usual at this season, there were exhibits of paintings of flowers and garden scenes. Sir **Herbert Maxwell**, Bart., had an extensive display of studies of many flowers; the chief were of various Liliums, Rhododendrons, Cistuses, Salvias and Polygonums, and all well executed.

The chief general painters of garden scenes and flowers were Miss **Ough**, who had fascinating scenes from Kew, Hyde Park and elsewhere, with studies of various flowers and fruits. Other exhibitors of interesting and beautiful gardens and of flowers were Mrs. E. A. **Anderson** Miss E. **Fisher**, Miss **Aumonier**, Miss W. **Walker** and Miss **Agnes Foreman**.

Fruit and Vegetable Committee.

Present: Mr. C. G. A. Nix (Chairman). Mr. W. Poupart, Mr. J. Cheal, Mr. Geo. F. Tinley, Mr. P. D. Tuckett, Mr. A. Poupart, Mr. Ed. Beckett, Mr. E. Neal, Mr. E. A. Bunyard and Mr. A. N. Rawes.

The seedling Apple sent by Mr. R. **Fairman**, Blue Anchor, near Crawley, was, on further consideration, not accepted for competition in the Bunyard Cup.

Groups.

Two outstanding exhibits of Potatos were staged, one by **Messrs. Dobbie and Co.**, Edinburgh, the other by **Messrs. J. Carter and Co.**, Raynes Park.

Messrs. **Dobbie and Co.**'s exhibit included some forty distinct varieties and was composed of high quality tubers, set out attractively on a dark velvet ground and relieved with coloured Beech foliage. There were very large groups of many of the varieties and it was a fine effort to show such large numbers of a particular variety in the best exhibition style. There were several unnamed seedlings of promise in addition to such excellent varieties as Great Scot, Golden Wonder, Katie Glover, Arran Rose, The Bishop, Di Vernon, British Queen, Arran Comrade, Citriona, Incomer, and Midlothian Early.

Messrs. **J. Carter and Co.**'s collection included fifty-six varieties and the method of exhibiting was very attractive. The use of a rich green velvet ground with Ericas, Palms and other plants as foils, brought high praise from visitors. All the most popular sorts were included.

Messrs. **G. Bunyard and Co., Ltd.**, displayed varieties of Apples in season, all well-grown, excellent specimens of their kind. The varieties were Baumann's Red Winter Reinette, Royal Jubilee, Wealthy, Sanspareil, Mere d'Menage, Peasgood's Nonesuch, Warner's King, Orlean's Reinette, Lane's Prince Albert, Chas. Ross, Stirling Castle, Lord Derby and Rival.

Messrs. **Laxton Bros.** showed varieties of Apples, including their new sorts Lord Lambourne and Superb, two Apples of fine quality. Other varieties shown well were King of the Pippins, Cox's Pomona, Worcester Pearmain, Allington Pippin and Rival.

HOLLAND (LINCS.) COUNTY POTATO SHOW.

Holland (Lincolnshire) County Potato Show, held at Boston, proved a success from all points of view. The entries were better than last year (359 against 326); the exhibits were of remarkable quality, despite the blight, which has nearly everywhere left its mark on the Potato crop this season; whilst the large and representative gathering which assembled in Holland's Garage (where the show took place) combined to make the exhibition a record.

The show was well-organised by a representative committee, with Councillor William Gilding, J.P., Chairman of the County Agricultural Committee, at its head, and Mr. J. C. Wallace, of the Agricultural Institute, Kirton, near Boston, as Secretary and Treasurer.

Lord Bledisloe, Parliamentary Secretary to the Ministry of Agriculture, opened the show with a speech containing some good advice to growers, and alluding to the importance of the Holland division as a Potato growing area. His lordship also spoke at some length at the luncheon which followed, which was attended by four Lincolnshire Members of Parliament, and quite a contingent of South Lincolnshire's leading public men.

In addition to £150 in prize money, spread over some fifty classes, twelve valuable Challenge Cups and five Gold Medals were awarded, also a number of special prizes; whilst awards were also made for trade stands and new or improved Potato implements.

The ten guinea Challenge Cup for three distinct varieties of first-early seed Potatos was won by Mr. **William Gilding**, J.P., of Swineshead, near Boston, Chairman of the Holland County Agricultural Committee. He was also a successful exhibitor in other classes.

Mr. A. B. **Bass**, a leading farmer of Holbeach, and a well-known Potato grower, proved most successful with his various exhibits, for in addition to prizes in various classes, he carried off the fifteen guinea Challenge Cup offered by Messrs. Daniels, of London, for the best exhibit of ware Potatos, any variety, open to Great Britain. Mr. **Bass** was also awarded the thirty-five guinea Challenge Cup given by Mr. H. C. Hogbin, of London, for the best hundredweight of Majestic ware Potatos; and the ten-guinea Challenge Cup, given by the Boston Farmers' Union for the best hundredweight of King Edward ware Potatos.

Mr. H. **Pogson**, of Spalding, secured the fifteen-guinea Challenge Cup for the best hundred weight of King Edward in a class confined to growers farming not more than two hundred acres. In another class, with a similar condition, Mr. J. **Walton**, of Long Sutton, won with white ware Potatos, the Cup in this case being given by the London Fruit, Flower and Vegetable Markets Association, Ltd. In the class for unwashed seed Potatos of any variety, boxed for sprouting, Mr. **Leggate**, of Lincoln, won the ten-guinea Cup as well as the first prize.

Mr. Thomas J. Wright, of Roxby, Scunthorpe, North Lincolnshire, was another very successful exhibitor, taking several prizes, and in the section limited to the county of Lincoln he secured the Challenge Cup, value twenty-five guineas, given by the Holland Farmers' Union for the best exhibit of ware Potatos, coloured or white. He also obtained the Gold Medal given by the Co-operative Wholesale Society for the best exhibit of white Potatos in this section.

There were some very good exhibits in the section restricted to *bona fide* smallholders in the county of Lincoln, and here Mr. H. Roughton, of Holbeach, won the ten guinea Challenge Bowl, given by Mr. Cecil Robinson, J.P., of Quadring, for the best exhibit in these classes, for coloured or white ware Potatos. The Gold Medal for the champion dish (open to the county of Lincoln only) was also won by Mr. Roughton, the dish comprising nine Potatos.

For Collection of Potatos (open to Lincolnshire), the ten-guinea Challenge Bowl given by Mr. William Gilding, was won by Mr. John Cock, a well-known grower, of Weston Hills, near Spalding, who had other successes to his credit.

In the trade section, the first prize, a Silver Challenge Bowl, value fifteen guineas, given by the South Lincolnshire Wholesale Potato Merchants' Association, was awarded to Mr. John Cock, of Weston Hills, Spalding, the second prize (a Silver Medal) going to Mr. R. Halliday, of Boston. It is worthy of note that Mr. Cock has won this trophy four years in succession, and once outright. In another class, for a general trade exhibit, Messrs. W. G. Hammond and Co., of Boston, took the first prize and Gold Medal, and Messrs. Sinclair and Son, of Boston, the Silver Medal.

Much interest centred in the class (open to Great Britain) for implements used in the cultivation of the Potato, either new design of implement, or an improvement on any existing implement, and here the first prize, a Gold Medal, was awarded by the judges to Messrs. Fisher, Humphries and Co., Ltd., of Pershore, Worcestershire; the second prize, a Silver Medal, being won by Messrs. J. and F. Howard, Limited, of Bedford.

GLASGOW AND WEST OF SCOTLAND HORTICULTURAL.

Principal William R. Paterson of the West of Scotland Agricultural College delivered a lecture on "Manuring," before the members of the Glasgow and West of Scotland Horticultural Society, on Wednesday the 27th ult., when Mr. Charles Young, Chairman of Directors, presided over a well-attended meeting.

Discussing some of the general principles associated with manuring, Principal Paterson pointed out that the lack of plant food-making material in the soil was only one of many factors affecting production, other influences being absence of moisture at the right time, fresh air and temperature. Growers could not go on indefinitely taking out the soil without putting in, and of the ten essential elements he emphasised the importance of nitrogen, phosphates, potash and calcium. These four materials were obtained by the plant entirely from the soil and absorbed by the medium of the root. He likened the chemical elements to a chain composed of ten links, four of which required to be extra strong otherwise they would wear through very quickly, and in the event of one being dispensed with the remaining nine would be stranded because each had a special function of its own. The lecturer proceeded to review the uses of the different agencies in detail. Potash he regarded as one of the most important constituents in the manuring of crops. Its effect on Potatos was to increase the size, and when that commodity was not present in sufficient quantity the crop contained a large proportion of small tubers. It also had an important effect on the health of the plant in assisting it to combat disease. Calcium had been used from time immemorial, yet they did not know all about it. Apart from its effect on the root and cell wall and in aiding to build up the frame work, it had a most marked effect on the health of the plant. In using artificial manures allowance must be made for the nature of the soil. Sandy soil was poor in all things.

In reply to questions Principal Paterson said farmyard manure would not be quite replaced by Hop manure, and he preferred green cropping as a substitute. For general purposes he recommended the following formula: Three parts superphosphate, one-and-a-half parts steamed bone-flour, two-and-a-half parts of sulphate of potash and three parts sulphate of ammonia. In the moist climate of the west of Scotland fresh farmyard manure was superior to any other form, and as regards the use of kainit, he said the experiments had shown that there was no need to apply it in autumn, as it was found that kainit applied in spring was quite as beneficial to crops excepting Clover.

ROYAL CALEDONIAN.

The October meeting of this Society was held at 5, St. Andrew Square, Edinburgh, on the 5th ult., Mr. W. J. Thomson, President, in the chair.

Mr. R. M. Adams, Royal Botanic Garden, Edinburgh, gave a lecture, profusely illustrated by lantern slides, on "The Vegetation of Ben Lawers," which he described as the most instructive example of mountain botany among the British hills. Nearly one-half of the plants of the Scottish flora was to be found on this mountain, which ranked as the fifteenth in height among the British hills, and for wealth of species surpassed all the others. The exhibits were Roses and Dahlias, by Messrs. Dobbie and Co. Ltd., Edinburgh (Gold Medal); Asters, by Messrs. Laird and Dickson, Edinburgh (Silver Medal); Dahlia Coltness Seedling, by Mr Chalmers Watson, Edinburgh; Chrysanthemum Monkton Gem, a sport from Millie Thorpe, by Mr. Thos. Wood, Musselburgh; Pompon Dahlias, by Mr. Pursell, Joppa; and Carrots, by Mr. G. Houston, Edinburgh (Cultural Certificate.)

Obituary.

Arthur de Smet.—It is with great regret that we announce the death, at the age of seventy-two, of M. Arthur de Smet, one of the outstanding figures in Belgian horticulture, which occurred towards the end of October. He had for some considerable time suffered from an incurable complaint, but the end came rather suddenly, congestion of the lungs having set in. M. de Smet will chiefly be remembered by English horticulturists as the President for a great number of years of the organising committee of the Quinquennial Ghent Floralies. A man of wide views, tolerant in the best conception of the word, he had but one ambition, to promote the best interests of horticulture; and in the pursuit of this ambition he held no sacrifice to be too great. He had tremendous energy and perseverance, and never allowed himself to be discouraged by difficulties or delays. Always with the same end in view, he played many parts—President of the Higher Horticultural Council, President of the Syndical Chamber of Belgian Horticulture, Administrator of the Ghent Royal Society of Agriculture and Botany; and many well-merited distinctions came his way, including the rank of Officer of the Order of Leopold, Commander of the Order of the Crown, Officer of Mérite Agricole, Chevalier du Christ of Portugal, etc. It was M. Arthur de Smet who laid the foundations of the International Horticultural Professional Union, and did much to win fame abroad for Belgian horticulture; he also worked to obtain official recognition for horticulture as a separate profession in the Ministry of Agriculture, with the result that to-day the Office Horticole, under its talented Director, M. van Orshoven, has far more than justified its existence. His widow and his son (Dr. Arthur de Smet) have sustained an irreparable loss.

ANSWERS TO CORRESPONDENTS.

Correction.—Gentiana detonsa.—We regret that owing to a clerical error in our issue of October 23, Gentiana detonsa was given wrongly as Gentiana detousa.

Begonia Plants Failing.—*T. W.* The roots and rootlets of the plants sent were swollen into small nodules which contained hundreds of eelworms. The bases of the plants were also rotting. By reducing the watering to a minimum some of the plants might be saved, but it would be wiser to make a fresh start with new plants in new or sterilised soil.

Fungus on Tennis Lawn.—*F. S.* At times it is difficult to deal with the fungus which appears in grass growing over a decaying tree stump. A generally successful method is to soak the ground with a solution of sulphate of iron, using one pound to one gallon-and-a-half of water. This should be done when the ground is wet and, so that the solution may soak the area thoroughly, it would be well to first lift the turf a little with a garden fork. Two further dressings at half-strength should be applied at fortnightly intervals. If this should not be effective, it will be necessary to remove all the soil above the stump and saturate it with a strong solution of caustic soda. Then refill the hole with fresh soil. The old turf could be relaid if it is treated with the sulphate of iron.

Grape Spot.—*S. S.* The berries are affected with spot disease, caused by the fungus Gloeosporium ampelophagum. Spray with liver of sulphur at a strength of half-an-ounce in two gallons of water, or dust flowers of sulphur on the leaves and bunches, and again at an interval of ten days. This winter, when the vines are dormant, spray the rods with iron sulphate in solution.

Feijoa.—*M. K.* This evergreen shrub or small tree belongs to the Natural Order Myrtaceae.

Names of Fruit.—*W. A.* 1, Beurré Superfin; 2, Beurré Hardy; 3, Doyenné du Comice. *T. W., Ltd.* Both Doyenné Gris. *D. W.* 1, Flanders Pippin; 2 and 3, Newton Wonder; 4, Trumpington; 5, Lord Derby; 6, Green Balsam; 7, Whiting Pippin. *H. B.* 1, Autumn Bergamot; bruised, possibly Josephine de Malines; 3, Louise Bonne of Jersey; 4, Brockworth Park; 5, Catillac; 6, Williams's Victoria; 7, Williams's Bon Chrétien; 8, Beurré Sterckmans; 9, Beurré Diel; 10, Beurré Bachelier; 11, Aston Town; 12, Josephine de Malines; 13, Claygate Pearmain; 14, Hanwell Souring; 15, Prince Bismarck; 16, decayed, probably Warner's King; 17, Blemheim Pippin; 18, Reinette de Canada; 19, probably Chelmsford Wonder; 20, Franklin's Golden Pippin; 21, Winter Strawberry; 22, not recognised; 23, Worcester Pearmain; 24, Dumelow's Seedling. *H. P.* 1, Glastonbury; 2, Beurré Hardy; 3, Maréchal de Cour; 4, Fondante d'Automne; 5, Durondeau *W. F.* 1, Stamford Pippin; 2, Dutch Mignonne (syn. Reinette de Caux); 3, Golden Reinette.

Name of Plants.—*R. D.* Cineraria maritima This is quite suitable for greenhouse culture. *L. S. Y.* Taxus brevifolia. *R. L. B.* 1, Ceanothus Gloire de Versailles; 2, Escallonia macrantha; this latter should be pruned in April. *E. C. V. G.* 3, Escallonia rubra; 4, Quercus acuta; 6, Pinus excelsa; 7, Abies Nordmanniana; 8, Tsuga Pattoniana; 9, Abies nobilis; 11, Cornus alba; the others are too small or withered to identify.

Rock Garden Epigraph.—*C. B.* We think that the best translation of "This Rock the Home of Flowers" for your purpose would be "Hocce saxetum florum refugium."

Communications Received.—E. T.—G. B.—M. C.—S. J.—W. H. J.—J. S.—J. W. H.

MARKETS.

COVENT GARDEN, Tuesday, November 2nd, 1926.

Plants in Pots, etc.: Average Wholesale Prices.

(All 48's except where otherwise stated).

	s. d. s. d.
Adiantum cuneatum per doz.	10 0 12 0
—elegans	12 0 15 0
Aralia Sieboldii	9 0 10 0
Araucarias, per doz.	30 0–42 0
Asparagus plumosus	12 0–18 0
—Sprengeri	12 0–18 0
Aspidistra, green	36 0–60 0
Asplenium, doz.	12 0–18 0
—32's	24 0–30 0
—nidus	12 0–15 0
Cacti, per tray —12's, 15's	5 0—7 0
Cyclamens, 48's, per doz.	18 0–21 0
Chrysanthemums, in variety, 48's, per doz.	18 0–30 0
Crotons, doz.	30 0–45 0
Cyrtomium	10 0–25 0
Erica gracilis, 48's, per doz.	24 0–36 0
—60's, per doz.	9 0–12 0
—nivalis, 48's per doz.	24 0–36 0
—60's ,,	12 0–15 0
—72's ,,	8 0—9 0
Hydrangeas, white, 48's per doz.	24 0–70 0
Lilium speciosum rubrum, 32's 48's each	2 6—3 6
Nephrolepis in variety	12 0–18 0
—32's	24 0–36 0
Palms, Kentia	30 0–48 0
—60's	15 0–18 0
Pteris, in variety	10 0–15 0
—large, 60's	5 0—6 0
—small	4 0—5 0
—72's, per tray of 15's	2 6—3 0
Solanums, 48's, per doz.	12 0–18 0
—60's, per doz.	9 0–10 0

Cut Flowers, etc.: Average Wholesale Prices.

	s. d. s. d.
Adiantum decorum, doz. bun.	12 0–15 0
cuneatum, per doz. bun.	8 0–10 0
Asparagus plumosus per bun., long trails, 6's	2 6—3 6
med. sprays	1 6—2 6
short	0 9—1 3
—Sprengeri, bun. long sprays	1 6—2 0
med. ,,	1 0–1 6
short ,,	0 4—1 0
Bouvardia, white per doz. bun.	12 0–15 0
Camellias, 12's, 18's per box	3 0—3 6
Carnations, per doz. blooms	3 6—5 0
Chrysanthemums, white, per doz.	4 0—8 0
—bronze ,,	8 0—6 0
—white, per doz. bun.	18 0–30 0
—bronze, per doz. bun.	18 0–30 0
—yellow, per doz. blooms	3 0—6 0
—yellow, per doz. bun.	18 0–24 0
—pink, per doz. blooms	4 0—8 0
—pink, per doz. bun.	18 0—24 0
—specimens, per doz. blooms	15 0–21 0
—Single Varieties—disbudded blooms, per doz.	5 0—6 0
—spray, per doz. bun.	30 0–36 0
Croton leaves, per doz.	1 9—2 6
Fern, French, per doz. bun.	10 0–12 0
French Flowers—	
—Acacia (Mimosa), per doz. bun.	15 0–18 0
—Eucalyptus, per pad	7 0—8 0
—Ruscus, green, per pad	6 0—8 0
—Myrtle, green, per doz. bun.	1 6—2 0
—Solanum berries. 300's, per pad	12 0–14 0
French Flowers—	
—Violets, Parma, per bun.	5 0—6 0
Gardenias, 12's, 18's per box	6 0—9 0
Heather, white, per doz. bun.	6 0—9 0
—pink, per doz. bun.	6 0—8 0
Honesty, per doz. bun.	15 0–18 0
Lilac, white, per doz. stems	6 0—7 0
Lilium auratum, per doz. blooms	10 0–12 0
—longiflorum long, per doz.	7 0—8 0
—speciosum rubrum, long, per doz. blooms	4 0—5 0
—short, doz. blooms	3 0—4 0
Lily-of-the-Valley, per doz. bun.	18 0–30 0
Orchids, per doz.	
—Cattleyas	24 0–36 0
—Cypripediums per doz. blooms	5 0—6 0
Richardias (Arums), per doz. blooms	8 0–10 0
Roses, per doz. blooms—	
—Madame Abel Chatenay	3 0—4 0
—Molly Sharman Crawford	3 0—4 6
—Richmond	3 6—5 0
—Golden Ophelia	4 0—5 0
—Sunburst	3 6—4 6
—Mrs. Aaron Ward	3 6—4 0
—Madame Butterfly	4 0—7 0
Smilax, per doz. trails	3 0—4 0
Stephanotis, per 72 pips	— 4 6
Violets	3 0—4 0

Remarks.—Supplies of cut flowers have been exceptionally short during the past week. Prices of Chrysanthemums have increased almost daily for both white and coloured sorts of good bunch blooms. White Chrysanthemums have been the most plentiful of those disbudded, but better supplies are anticipated for this coming week. Indoor blooms are increasing in quantity and their prices may lessen. The quantities of single varieties are increasing almost daily, the best sorts being J. Blythe, Florrie King, Mary Richardson, Phyllis Cooper and White Beauty. Roses retain their fine quality, but supplies are gradually lessening and prices are firmer to-day. The new crop of Carnations is now available and the blooms are better in quality; prices for these flowers are slightly easier. The quantities of Richardias (Arums) marketed are still below requirements. Lilium longiflorum is dearer, also pink L. longifolium. Gardenias are getting scarcer, and there are very few Camellias in the market. More Lily-of-the-Valley is coming from home-growers, and a fairly good supply from Holland. Cypripediums are the most plentiful amongst Orchids. Supplies of French flowers are on the increase. The newest subjects are yellow Marguerites, scarlet and white Ranunculus, and the first consignment of Single Violets. The first consignment of white Lilac has been received from Holland in good condition.

Fruit: Average Wholesale Prices.

	s d. s. d.
Apples, American—	
—York Imperial per barrel	20 0–24 0
—Jonathan, per barrel	12 0 14 0
—Grime's Golden	10 0–14 0
—British Columbian Jonathan	10 0–14 0
Apples, English—	
—Worcester Pearmain, cases	12 0–14 0
—Chas. Ross, ½-sieve	8 0–10 0
—Lord Derby	6 0–10 0
—Newton Wonder	8 0–12 0
per bushel	6 0–10 0
—Bramley	10 0–16 0
—Lane's Prince Albert, bush.	8 0–14 0
—Tyrolean	5 0–10 0
—Californian Newtown Pippins	8 0–10 0
—Jonathan	10 0–13 0
—American Cox's Orange Pippin, per case	18 0–20 0
Nova Scotia	14 0–18 0
—King, per barrel	20 0–24 0
—Ribston Pippin	18 0–22 0
—Blenheim Pippin	17 0–22 0
—Ontario	14 0–16 0
—Others	14 0–18 0
Apples, Italian, per box	5 0—7 0
Bananas	11 0–22 6
Chestnuts, Redon, per bag	18 0–25 0
Cob nuts, per lb.	0 8–0 8½
Figs, French, per box	0 9—1 3
—Italian, per box	0 9—1 3
Grape Fruit—	
—Blue Goose	30 0–35 0
—British Honduras	22 0–25 0
—Isle of Pines	22 6–25 0
Grapes, English—	
—Canon Hall	4 0—6 0
—Gros Colmar	1 9—3 0
—Alicante	1 0—3 0
—Muscat	4 0—7 0
Grapes Belgian	1 0—2 6
Lemons, Messina, per case	14 0–20 0
—Naples	18 0–20 0
Melons—	
Oranges—	
—Californian	20 0–25 0
Peaches, Belgian per doz.	8 0–20 0
Pears, English—	
—Conference, ½-sieve	6 0—8 0
—Comice	10 0–15 0
—Special, per doz.	4 0–12 0
Pears—	
—Californian Comice—	
½-cases	11 0 14 0
cases	16 0 20 0
—Winter Nelis, ½-case	12 0 14 0
—Beurré D'Angou	16 0 20 0
—Tyrol	4 0—5 0
—ordinary	3 0—4 0
Pines	2 0—4 0
Walnuts, Grenoble bag.	8 6 11 0

Vegetables: Average Wholesale Prices.

	s. d. s. d.
Beans—	
—Forced	1 3—2 0
—French, per crate	5 0—6 0
—Madeira	4 0—6 0
Beets, per cwt.	5 0—6 0
Cabbage, per doz.	2 0—3 0
Carrots, per ½-bag	4 6—5 6
Cauliflowers, per	
Celery, fans	2 0—2 6
Chicory, Belgian	0 4—0 6
Cucumbers, per doz.	5 0—8 0
—Flats	16 0 18 0
French Batavia	2 0—3 0
French Endive, per doz.	2 6—3 0
Lettuce, round, per doz.	1 6—2 6
Mint, forced, per doz.	4 0—6 0
Mushrooms	
—cups	3 0—4 0
—Broilers	2 0—2 6
—Field	1 0—1 6
Onions—Valencia	9 6 10 6
Parsnips, per cwt.	5 6—6 6
Potatos—	
—King Edward ton	£8, £10
—others, ton	£5, £8
Sprouts, Brussels per ½-bag	3 6—6 0
Tomatos—	
—English, pink new crop	6 0—8 0
—pink and white, new crop	6 0—8 0
—pink, old crop	2 6—3 6
—pink and white, old crop	2 6—8 0
—Guernsey	4 0—6 0
—Jersey	4 0—6 0
Turnips, per cwt.	6 0—7 0

Remarks.—A moderate volume of produce is being handled and the demand is such that prices generally are steady. Stocks of imported Apples are ample for the demand and quotations all round are low. The few first-grade English cookers that are available sell well at firm prices. English Cox's Orange Pippin is very scarce and very dear. Hothouse Grapes are maintaining satisfactory prices. The demand for English Doyenné du Comice Pears is slightly improved, although there are still important consignments of this variety from California. Tomatos are selling fairly well, and the earlier shipments of this produce from the Canaries are also finding a good market. The Cucumber trade is slightly firmer. Mushrooms are arriving in larger quantities, but their prices are being maintained. French Beans from Guernsey are selling well at much improved figures. The few forced new Potatos from Guernsey that are arriving sell freely at a good value. Green vegetables remain a steady trade, but root crops are in slow demand. The Potato trade keeps moderately firm.

GLASGOW.

The tone of the cut flower market was very firm last week and prices being influenced by a scarcity of Chrysanthemums, the upward movement was general and the advance more pronounced than has been experienced since the improvement began. The value of Almirante, which was quoted in the previous report at 8d. to 1/- for 6's, advanced to 1/2 to 1/4, while White Thorpe made 2/- on Friday. Blanche de Poitou and Lemon Thorpe realised from 1/6 to 1/9; Rose Maid, 1/3 to 1/6; Pink Profusion, 1/2 to 1/4; La Pactole, 1/- to 1/4; Cranfield Pink, 1/- to 1/3; Dolores, 10d. to 1/2; Sanctity and Framfield White, 10d. to 1/-; Belle Mauve, 9d. to 1/-; and Special sprays, 1/3 to 1/5 per bunch Carnations were dearer at 4/ to 4/6 per dozen and the following prices were paid for Roses: Madame Butterfly and Madame Abel Chatenay, 4/- to 5/-; Mrs. H. Stevens, 2/- to 3/-; and Richmond, 2/- to 4/-. Lilium longiflorum (Harrisii) was worth from 5/- to 6/- per bunch; Solanum berries, 13/- to 15/- per pad; and Ruscus, 10/- to 12/-.

There was a complete absence of the activity usually experienced at Halloween in the fruit market. American Apples, which were plentiful and cheap, were purchasable at 7/- per case, but better qualities of fruit were disposed of at the following prices: King David, 9/- to 10/6; Jonathan, 9/- to 12/-; McIntosh Red, 10/- to 12/6; Delicious, 14/- to 15/-; Canadian King No. 1, 28/- to 30/- per barrel; No. 2, 24/- to 26/-; York Imperial, 22/- to 26/-; Snow, No. 1, 25/- to 28/-; Greening, No. 1, 22/- to 25; No. 2, 20/- to 23/-; Wealthy No. 1, 22/- to 25/-; No. 2, 18/- to 20/-; Cranberry Pippin, No. 1, 22/- to 24/-; No. 2, 17/- to 19/-. Blocks Winter Nelis Pears realised 14/- to 16/6 half-case, but there were other brands in the market at 12/- to 15/- per case. Californian Glou Morceau made 12/- to 12/6; and Washington Beurré d'Anjou, 15/- to 18/-. Jamaica Oranges averaged 20/- per case; Californian Sunkist Oranges, 28/- to 30/-; and South African Oranges, 25/- to 27/-. Grape Fruit realised 18/- to 20/-. Scotch-grown Gros Colmar Grapes were worth 3/9 per lb.; English Tally Ho, 9d. to 1/-; and Dutch, 7d. to 8½d. Figs in 2½ layers sold at 8/- per box of 10 lb.; in glove boxes at 3/6 per dozen. Green Figs sold for 8d. to 9d. per box. French Chestnuts realised 32/- per bag.

Prices for Tomatos fluctuated between 4½d. and 10d. per lb.; green Tomatos were worth 1/- to 1/6 per chip; Lettuces realised 1/3 to 1/6 per dozen; and English Cucumbers, 6/- per dozen.

GARDENING APPOINTMENTS.

Mr. W. R. Ackland, for the past six years gardener to George Roberts, Esq., Martholme, Parkside, Wimbledon, as gardener to S. Lewis, Esq., The Arches, Wargrave, Berkshire. (Thanks for 2/- for R.G.O.F. Box.—Eds.)

Mr. M. S. Ashmead, for the past six years gardener to the Rt. Hon. Lord Wittenham, C.B., Howbery Park, Wallingford, Berkshire, as gardener to Col. Spencer Follett, C.B.E., Rockbeare Manor, Exeter Devon. (Thanks for 2/6 for R.G.O.F. Box.—Eds.)

Mr. R. C. Cottam, as gardener to G. Mayer, Esq., Wistlers Wood, Woldingham. (Thanks for 2/6 for R.G.O.F Box—Eds.)

Mr. Wm. Doggett, late foreman at Nyman's, Handcross as gardener to Major J. R. Warren, M.C., The Hyde, Handcross. (Thanks for 2/- for R.G.O.F. Box.—Eds.)

Mr. H. Deverill, for the past seven-and-half years gardener to Col P. B. Cookson, Meldon Park, Morpeth, Northumberland, as gardener to Frederic Straker, Esq., Angerton, Morpeth.

Mr. Alfred Edney, for six years gardener to B. Goodman, Esq., of Edgbaston, and also at Hill Crest, Evesham, as gardener to Geo. Jackson, J.P., at Barrow Court, Edgbaston, Birmingham.

Mr. W. Effamy, previously gardener at Cheam Park, Cheam, Surrey, as gardener to the Rt. Hon. Earl Arran, Thoby Priory, Mountnessing, Brentwood, Essex. (Thanks for 2/- for R.G.O.F. Box.—Eds.)

Mr. A. Grant, previously gardener to the Viscountess Milner, Sturry Court, Canterbury, as gardener to R. Stafford Charles, Esq., Woodside House, Chenies, Rickmansworth, Herts.

Mr. J. C. Harper, for the past three years gardener to the late James Bryant, Esq., at Brynmair, Llandudno, North Wales, and twice previously foreman to the late Arthur Bradbury, Esq., at Bryn-Lupus, Llandudno, North Wales, as Gardener to Mrs. Arthur Bradbury Bryn-Lupus, Llandudno, North Wales. (Thanks for 2/6 for R.G.O.F. Box.—Eds.)

Mr. E. W. Norton, for the past twenty-six years gardener and bailiff to Hon. Baron Dimsdale, Lady Thisteven and Sir Frederick Lewis, Bt., as gardener to Miss Baird, Abbots Hill, Kings Langley, Hemel Hempstead. (Thanks for 2/- for R.G.O.F. Box.—Eds.)

Mr. E. J. Stenner, for the past three years gardener to H.I.H. Prince Victor Napoleon, Farnborough Hill, Hampshire, as gardener to W. H. Cottingham, Woolley Hall, Maidenhead, Berkshire. (Thanks for 2/- for R.G.O.F. Box.—Eds.).

Mr. W. H. Symons, for the past three years gardener to The Hon. Mrs. Skeffington Smyth, Stockton House, Codford, Wiltshire, as gardener to Sidney Hill, Esq., Langford House, Langford, near Bristol. (Thanks for 2/- for R.G.O.F. Box.—Eds.)

Mr. Harry Winter, for the past six-and-a-half years gardener to Frederic Straker, Esq., Angerton, Morpeth, Northumberland, as gardener to W. A. Silcock, Esq., Aughton Springs, Aughton, near Ormskirk, Lancashire.

CATALOQUES RECEIVED.

Backhouse Nurseries, Ltd., York.—Trees and shrubs, Roses, climbers, etc.

W. Smith and Son, Ltd., Aberdeen.—Forest Trees, ornamental shrubs and trees, etc.

J. Cheal and Sons, Ltd., Lowfield Nurseries, Crawley.—Hardy flowers, trees and shrubs, etc.; Roses.

G. Monro, Ltd., 4, Tavistock Street, W.C.2.—Sundries. (Wholesale).

Foreign.

M. Herb, 24, Via Trivio, Naples, Italy.—Novelties.

M. Leenders and Co., Steyl-Tegelen, Holland.—Roses.

F. Roemer, Quedlinburg, Germany.—Flower Seeds.

L. Ferard, 20, Rue de la Pépinière, Paris.—Plants, fruits, etc.

Wilhelm Pfitzer, Ltd., Stuttgart, Germay.—Flower seeds.

THE
Gardeners' Chronicle
No. 2081.—*SATURDAY, NOVEMBER* 13, 1926

CONTENTS.

Alpine garden—
Fragrant alpine plants 386
Primula Franchetii 386
Amaryllis Belladonna 396
Books, notices of—
Research and the Land 393
Bulb garden—
The hardy Pancratiums 386
Bulb, planting ... 396
Fruit garden—
Apples in 1926 ... 394
Fruit garden, the market 394
Fuel from the countryside 383
"Gardeners' Chronicle" seventy-five years ago 383
Garden, the October... 381
Gardens, classical and legendary 390
Hardy flower border—
Morisia hypogaea ... 386
The double Evening Primroses ... 386
Indoor plants—
Bertolonias ... 388
Impatiens Sultanii... 388
Spring sowing of Clarkia 388
Motors and machinery, the economical upkeep and repair of ... 392
Nomblot, M. A. ... 382
Nursery Notes—
Alex. Dickson and Sons 393
Pentstemon gentianoides and Lilium auratum 396
Phormium tenax ... 387
Polyanthuses of a century ago 390
Potato King Edward and slugs 396
R. H. S. examinations in 1927 382
Ribes speciosum ... 396
Richmond Hill vista, the 382
Rose garden—
A Rose of sterling merit 388
Old fragrant Roses 388
Salvia involucrata Bethellii 396
Scottish alpine flora ... 382
Societies—
Birmingham and Midland Counties ... 398
Glasgow and West of Scotland Horticultural 398
Guildford and District Gardeners'... 399
Marlow and District Chrysanthemum... 398
National Chrysanthemum 396
Reading and District Gardeners' ... 398
Royal Horticultural 399
Royal Scottish Arboricultural ... 398
Sugar-beet yields in Scotland, high ... 382
Sweet Peas, Scottish classification of ... 382
Trees and shrubs—
Erica mediterranea 389
Picea Breweriana ... 389
Pyracantha Gibbsii 389
Robinia Pseudacacia 389
Vegetable garden—
To prevent bolting in Cabbages ... 396
Winter salads ... 395
Week's work, the ... 384
Wild garden—
Geranium Lowei ... 386
The Willow Gentian 386

ILLUSTRATIONS.

Brasso-Laelio-Cattleya Margery... 391
Chrysanthemums, a first prize vase of 383
Nomblot, M. A., portrait of 382
Phormium tenax 387
Picea Breweriana, branchlet and cone of 380
Potatos exhibited by Messrs. J. Carter & Co. 395
Primula Franchetii 385

Average Mean Temperature for the ensuing week deduced from observations during the last fifty years at Greenwich, 41.0.

Actual Temperature—
The Gardeners' Chronicle Office, 5, Tavistock Street, Covent Garden, London, Wednesday, November 10, 10 a.m. Bar. 29.6. Temp. 49°. Weather, Raining.

The October Garden. It is fortunately rare for the pageant of the garden to be brought so swiftly to an end as has been the case this year. The late summer drought and the boisterous winds of September were no doubt this year's kill joys and it only remained for the severe October frost to give the *coup de grace.* And so before the normal time most gardens began to wear their winter aspect. The forward gardener —that greatest of all treasures, who is always up to time with his work—turned, as usual, the weather to advantage. Where he reigned it was a pleasure to see the upturned earth powdering under the touch of frost. But there were gardens in droughty soils where even the forward gardener could not dig because of the dryness of the ground. Yet, though the Dahlias, Antirrhinums, African Marigolds, Tobacco plants and many others were brought by the weather to a premature end, the late-flowering Asters survived unscathed, although by no means unbowed, and once again proved their value as autumnal ornaments of the garden. But the chief joy of the well-stocked garden in this season is from the autumnal colouring of trees and shrubs. It is perhaps true to say that in a general way the final pageant of the year, the flaming of dying foliage, is less brilliant than usual. In despite of the frost, Oak and Elm are, in the part of the world of which we write, only just beginning to change greenness for russet-brown or yellow; yet the scarlet Oak, Quercus coccinea, was never more brilliant than we have seen it this year. The Liquidambar (L. styraciflua) resisting the deadly touch of frost, is but now beginning to show its vinous tints, whereas its rival in autumn colour, the Purple Vine (Vitis vinifera purpurea) as well as the large-leaved V. Coignetiae and V. heterophylla, went down in the same garden with leaves all sodden and dead before the first hard attack of frost. Surely the response of foliage to frost is an example of what physiologists call all-or-nothing reactions; two Ash trees in gardens not more than three miles removed from one another afford evidence. Beneath the one after a recent hard frost the ground was littered with sodden green-black leaves. On the other the leaves yet hang in full summer greenness. It would seem that when death from low temperature comes to foliage it comes suddenly. A degree less and the leaf is uninjured; a degree more and, lo! it dies and falls. That this is almost certainly the case may be inferred from the well-known fact that leaves which turn black when they die—as for example the Privet when put into warm water—remain green until a certain temperature is reached and then suddenly blacken before the eye. Of all autumn displays of colour which this year, generally somewhat grudgingly, has provided, those of Berberis species and hybrids are perhaps the most conspicuously beautiful, albeit the Cotoneasters run them close and the Azaleas rival them. As Ferdinand said *àpropos* of Miranda "for several virtues I have loved several women," so may the gardener, and for the same reason, admire several (or many) species of Berberis; B. Thunbergii for brilliant autumn leaves, B. virescens for its deep red stems and B. subcaulialata, B. polyantha and B. Wilsonæ for their graceful habits and profuse display of berries. Of these species B. Wilsonae deserves some investigation. It is under suspicion of being of hybrid origin. It seeds freely and its seedlings show much variation. This year's sudden passing of so many late-flowering annuals drives home to the gardener the wisdom of planting for late autumn and winter effect, and now is the time to make amends for any omission in this direction. If on these bright sunny days the garden is not brilliant with colour the defect must not be laid to Nature's charge. The plants which may supply it are many and easy of cultivation and the cost of acquiring them is light. The investment is a gilt-or golden-edged one and, moreover, none can yield a higher rate of interest. A garden supplied with a well chosen selection of Conifers of evergreen habit and varied tones of green—the blackness of the Yew and Cypress, the beautiful brownness of Cryptomeria elegans, the gold of Retinospora Crippsii and the glaucousness of the Atlantic Cedar and of Picea pungens glauca (where it will grow)—and stocked with hardy trees and shrubs, does not soon surrender to the onslaught of hard weather, but "dies beautifully" as the year draws to a close.

Royal Botanic Society's Greenhouses.—According to the *Quarterly Summary* issued by the Royal Botanic Society, Regents Park, the small glasshouses in the frame yard have had to be closed because of their dangerous condition. At the anniversary meeting of the Society, the Chairman made an appeal for funds to repair the greenhouses, for the Council is not in a position to do this owing to exceptional demands on its resources. The income for 1925 was £282 more than in the preceding year, and the expenditure £222 less, but a reduction of the loan from the bank absorbed more than half the surplus of income over expenditure.

Rating in Rural Districts.—The Ministry of Agriculture has re-issued its leaflet on Assessment of Local Rates. The leaflet is really a memorandum by the department primarily concerned, namely, the Ministry of Health, and it states the more important alterations made by the Rating and Valuation Act, 1925, so far as they directly concern occupiers of land. The special rating of agricultural land and farm buildings also the rating of woodlands and sporting rights are dealt with. Where a farmer or other occupier desires to lodge an objection to an assessment, the steps to be taken are explained in paragraph 8 (*c*) of the leaflet. Copies are to be obtained on application to the Ministry at 10, Whitehall Place, London, S.W.1.

The Potato Crop.—According to the *Monthly Agricultural Report* of the Ministry of Agriculture practically all the Potato crop has been lifted in most districts, and the tubers have been clamped in clean and dry condition. On the whole, the Potatos are small, and the crops are light. Disease is reported in nearly all districts, but especially so in the important Potato areas in the east of the country. In the eastern counties the crop is estimated to be nearly two tons per acre below the average of the past ten years, and in the north-eastern counties about one-and-a-quarter ton below average, but in the north and in the south-west of England and in Wales yields practically equal to the average have been obtained. The yield per acre over the whole of England and Wales is estimated at 5.4 tons, or about three-quarters of a ton below average. The estimated total production of 2,682,000 tons is 532,000 tons smaller than last year's crop, and 476,000 tons below the average of the ten years 1916-1925.

Apple Canning Demonstration.—The Ministry of Agriculture has arranged a special demonstration in Apple canning to be carried out at the British Fruit Packing Company's factory, at East Farleigh, near Maidstone, Kent, on Monday, November 15, at 2 p.m. All persons interested in the subject of fruit canning, and desirous of inspecting the special experimental plant which has been installed, are invited to attend the demonstration. The factory adjoins the railway station at East Farleigh, which is two miles from Maidstone.

Styrax officinale in France.—Styrax officinale, belonging to the family Styraceae, is a handsone tree, bearing numerous white, sweetly-scented flowers. It grows to a height of six or seven metres, or forms a bushy growth with intertwining branches, recalling the Quince in its habit and foliage. By making longitudinal incisions in the bark, a balsamic resin is made to exude; this is known as storax, and was formerly used in perfumery. It is, however, only produced when the plant forms, as is natural to it, a tree; if it is prevented by pruning from growing beyond the stature of a bush, the resin is not available. As this is the usual method of growing the species, the true storax is now practically unobtainable, and is only seen in museums. It is considered by some writers that Styrax officinale is a native of France. It is true that Peiresc, the famous Provençal botanist and member of Parliament, sent plants of Styrax officinale in the seventeenth century to Paris, for the Jardin du Roi; but he may have introduced the species, as he was known to make experiments in acclimatisation. On the other hand, the species acquired very early a local name in Provence—Aliboufier, or Alibouflé—which makes it improbable that it was merely a garden escape from Belgencier, where Peiresc lived, besides which the presence of the species was reported from Provence in 1580, before Peiresc was born. In the last few months, a member of the French Touring Club (Mr. Léopold Décugis) sent seeds of the species from Méounes (Var) to the Paris Museum of Natural History, stating that the plantation covered several thousand hectares. He gave it as his opinion that the Carthusians, who had a monastery at Montrieux, had probably introduced the species; they are said to have collected the resin and stored it in little glass pots, also using the seeds to make rosaries. In 1897, however, a French botanist named Ludovic Legré, was strongly of opinion that the Styrax was indigenous. He had seen the plantation referred to above, and stated that the trees were growing, not like exiles from their home, but with all the strength and vigour of natives, victorious in the struggle for existence. On the whole, opinion inclines to the view that the Styrax was probably introduced into France and Italy from the East many centuries ago, and that it has since become completely naturalised. It has several habitats in the south of France, for instance, Var (as mentioned above), the mouth of the Rhône, and the Alpes-Maritimes, but its genuine habitat would appear to be limited to Asia Minor, Palestine, Syria and the east of Europe (the Mediterranean coast). Styrax officinale is cultivated in certain collections in the south and south-west of France. It fruits in the Botanic Garden of Montpellier, and even in the Arboretum of La Maulévrie, at Angers. Further north, it only grows in very sheltered positions, and is killed by frost in Paris if the winter is at all severe. Seeds have to be planted immediately they are harvested, as they rapidly lose their germinative properties; and even then, germination frequently takes several months to accomplish.

The Richmond Hill Vista.—The question was discussed recently at a meeting of the Middlesex County Council of the acquisition of the Orleans House Estate at Twickenham, in order to prevent the spoiling by unsuitable development of the present beautiful view from Richmond Hill. It was stated that, owing to lack of support, the scheme has had to be abandoned, but that under an amended scheme the Riverside Meadow was to be secured immediately for the public, and restrictive covenants placed on the remainder of the property in such a way as to preserve the view at that point. Eight thousand pounds has now been raised towards the purchase of the Riverside Meadow, but another two thousand is still required.

Scottish Classification of Sweet Peas.—Assisted by Mr. David Cuthbertson and Mr. J. B. McFie, of Messrs. Dobbie and Co., the Directors of the Scottish National Sweet Pea and Rose Society have formulated and published a list of Sweet Peas considered suitable for exhibition in Scotland. It differs in several important respects from the Classification List prepared by the National Sweet Pea Society. The colour classes are ten fewer in number, and out of the twenty-nine sections there are only nine starred varieties which correspond with the English selections. New sorts are prominent in that category, being represented by Robin Hinton, pale bicolor; Highland Mary, blush-pink; Venus, cream-pink (pale); Sybil Henshaw, crimson; Carmelita, flushed pink; Gleneagles, bluish lavender; Lilac Queen; Chieftain, mauve; Magnet, salmon-pink; Olympia, purple; Gold Crest, salmon-orange; 2 LO, scarlet-orange; and Avalanche, white. Old sorts, such as Mrs. Cuthbertson, Marks Tey and Private Jack Smillie, find a place, while Ivory Picture, W. J. Unwin, Pimpernel and other examples which figured prominently in Mr. Burt's Sweet Pea Audit, are absent from the more recent Scottish list. Mary Pickford and Miss California, classified cream-pink, (pale), and cream-pink (deep), respectively, in the English list, appear under cream-pink (deep) and pink (salmon) in the Scotch selections; while Angele, starred by the former body in the fancy class, is here included among the bicolor (deep) varieties along with Marks Tey, which is considered to be the better of the two. Perhaps the greatest surprise is the appearance of Avalanche in the white class and its position in front of Constance Hinton. As it was only distributed this year, it was only staged at one or two of the more prominent shows, and while the purity, form and substance of the blooms were acknowledged, it was generally regarded as being too small in size for exhibition purposes.

M. Alfred Nomblot.—As General Secretary of the Société Nationale d'Horticulture de France, M. A. Nomblot has many arduous duties to perform, but he will come even more prominently before the horticultural world in connection with the Centenary of the Society, which is to be celebrated in Paris in the spring of 1927. As a student of the National Horticultural College at Versailles, M. Nomblot achieved eminence and was subsequently sent by his own Ministry of Agriculture to study horticulture in an English nursery at Kilburn, where he was employed in 1893. In due course he returned home and became partner in the firm of M. Désiré Bruneau and was so successful that in 1901 he became head of the firm, and a prominent and successful exhibitor at many of the leading continental exhibitions. He has also been called upon to act as judge at great horticultural functions at St. Petersburg, Liége, Milan, Saragossa, Brussels, Turin, Ghent, London and St. Louis. He has presided over numerous horticultural conferences and held various positions, such as those of Professor of Arboriculture to the City of Paris, Professor at the National Horticultural College at Versailles, and President of the Agricultural Office of the Department of the Seine. During the war period, M. Nomblot served as Major and subsequently as Lieutenant-Colonel, and was wounded and mentioned in Army Orders. His numerous decorations include those of Commander of the Legion of Honour and of Le Mérite Agricole. Notwithstanding his many duties, M. Nomblot has found time to act as lecturer to many learned societies, to write for various horticultural publications, and to raise new varieties of fruits, and it is probably because he is such a thoroughly busy man that he has for so long held the position of General Secretary to the National Horticultural Society of France. He is fortunate in possessing a charming personality, and his tall, stalwart figure is well-known to those horticulturists who have visited the exhibitions of the Society in Paris.

M. ALFRED NOMBLOT.

General Secretary of the Société Nationale d'Horticulture de France.

Royal Horticultural Society's Examinations in 1927.—The examinations of the Royal Horticultural Society will be held in 1927, as follows:—Written Examinations: General Examination (Seniors and Juniors), Wednesday, March 23; School Teachers' Examination (Preliminary and Honours), Saturday, March 26; National Diploma (Preliminary and Final), Saturday, May 7. Practical Examinations: Teachers' Honours, Friday June 17, and possibly also Thursday, June 16; National Diploma (Preliminary), Tuesday, June 21 and Wednesday, June 22; (Final) Thursday, June 23 and Friday, June 24. All entries, except those for the National Diploma, should be made on the form in the syllabus, obtainable from the Secretary of the Royal Horticultural Society.

Scottish Alpine Flora. — Deputising for Professor Drummond, Glasgow University, who was to lecture at the monthly meeting of the Royal Caledonian Horticultural Society, Mr. Robert M. Adam, Royal Botanic Garden, Edinburgh, delivered a lecture on "The Vegetation of Ben Lawers," which he described as the most instructive example among British hills whereon to study mountain botany. Its abundant and unique flora have caused it to become a Mecca for all students of British flora. Though it only ranks fiftieth in the order of height among British mountains it rivals and surpasses all others for wealth of species, and especially alpine plants. Out of a known and recorded 1024 Scottish flowering plants some five hundred could be gathered on and in the vicinity of that hill. It was the alpine element in the flora which was of supreme interest. On the slopes of Ben Lawers, and particularly at the higher levels, a society of plants was to be found which must be regarded as constituting a mere remnant of a former flora which dominated the entire kingdom. This was an arctic flora which in a war waged between arctic and southern types was beaten by the climate and its scope became less. Many plants were banished for this habitat became populated by the new plant colonists, while the diminishing arctic species have gradually retreated to those regions where only the most hardy and resistant can survive. That process is going on to-day and Ben Lawers may be regarded as one of the last citadels of these much harassed plants. Chief among the factors which have aided the survivors to hold out is the elevation and the peculiar rock formation of Ben Lawers. The schists have been crushed and folded so that in the process of weathering every sort of crevice cranny and ledge is favourable to the growth of the plants. The minerals contained in the rocks are all favourable to plant life and it is upon the rocky outcrops that the most striking of the alpines grow. A passing reference was made to the historic discoveries by two Scotsmen, Don and Mackay, and Dickson of Covent Garden, 140 years ago, which made the hill famous. To-day there was reason to fear the ruthless collector. For some of the plants Ben Lawers was the only British locality, and it would not be difficult for the ardent hunter to remove them all. The lecture was made all the more attractive by a series of illustrations showing Ben Lawers in all seasons, its geology and flora.

High Sugar-Beet Yields in Scotland.—Writing in *The Glasgow Herald* on November 3, a correspondent gives figures relating to the Sugar Beet crops in Scotland, which have not previously been made public. The actual area under crop this year is estimated at 3,000 acres, as compared with 1,500 acres in 1925, and the lifting of the roots began in the second week of October. As a proof of the excellence of Scottish Sugar Beet, he gives the results of a periodic analysis made in the middle of September, and states that the sample roots were taken in the ordinary course as representing the average in every case, and no selection of roots or of analyses was made for "show" purposes. The weight of a single root grown in Wigtownshire was 32 ounces, and the percentage of sugar 16.5. Ayrshire, 25 ounces and 16.4 per cent.; Bute, 19 ounces and 19.3 per cent.; Berwickshire, 22 ounces, 16.1 per cent.; Cromarty, 21 ounces, 17.8 per cent. For purposes of comparison, the official figures for the same period are published from five continental countries as follow: France, 14.1 ounces weight, and 16.5 percentage of sugar; Germany, 17 ounces and 14.9 per cent.; Bohemia, 14 ounces, and 16.1 per cent.; Moraira, 15.9 ounces and 16 per cent.; Czechoslovakia, 14.1 ounces and 16.4 per cent. Sugar Beet in these countries has long since passed the experimental stage, yet the Scottish figures give a mean of 26 ounces weight of root against the continental 15.1 ounces, and a mean sugar content of 17.2 per cent. against 16.16 per cent. As a general rule the tendency is for the larger roots to have a lower percentage of sugar, while the smaller ones show a higher sugar content. The Subsidy Act fixes the minimum sugar content at 15.5 per cent., and in addition to the contract price, threepence for every decimal point over that yield is paid. On that basis it is estimated that the Bute farmer would actually be getting £3 1s. 3d. per ton. The seeds used were of Janowski, a Polish variety, and Klein Wanzleben, a Czechoslovakian strain, both of which have given excellent results.

German Nurseryman's Twenty-five Years' Service.—On the 26th of November, Herr Thomas Sode completes twenty-five years as head of the Orchid Department in the well-known nursery of Otto Beyrodt, of Berlin. Herr Sode, who spent several years in English nurseries in his youth, entered the service of Herr Otto Beyrodt in November, 1901. During the war period, when labour was almost impossible to obtain, and material for heating the houses practically lacking, it was a difficult matter to bring the plants safely through the winter, and was only made possible by Herr Sode's industry and resourcefulness.

Fuel from the Country-side.—The scarcity of coal has resulted in a boom in the wood-cutting industry, and all over the country many fine trees, as well as much rough timber, are being felled for the wood-seller, who finds a ready market for anything combustible. In large towns, where coal is unobtainable, logs are being retailed at extortionate prices, and dealers are searching far and wide for supplies. Many farmers are "making hay whilst the sun shines" and reaping a fine harvest from their hedge-row timber. The boom in the log trade has attracted many with no previous experience, and we know of one case where many tons of green Willow were purchased from a farmer, but the inexperienced buyers found when the timber was delivered to them that sawing it into suitable logs was a most difficult and expensive problem. On an estate near Neasden, nearly all the trees have been cut down and sold for fire-wood by costermongers, one of whom was caught felling a tree, and heavily fined at the local Police Court. The fuel shortage has brought home to the commoner the value of his rights in turf, and many thousands of turves have been cut and stacked for burning. Some fifty years or so ago, dried turf was used extensively by cottagers for fuel in country districts, and on many of the commons local folk have rights to pasturage, fuel, and turf. The appropriation of timber for fuel purposes has affected one branch of the horticultural industry, that of the summer-house builder and the maker of arches and pergolas, for the trade in wood for fuel is so brisk and the wood so valuable that rustic-wood merchants find it difficult to obtain supplies. These tradesmen have usually a brisk business in autumn when high winds blow down supports which have decayed, thus necessitating their renewal.

Appointments for the Ensuing Week.—MONDAY, NOVEMBER 15: National Chrysanthemum Society's Floral and Executive Committees meet. TUESDAY, NOVEMBER 16: Royal Horticultural Society's Committees meet: Birmingham Chrysanthemum Society's show (three days); Winchester Gardeners' Association's meeting; British Carnation Society's annual dinner at Frascati Restaurant. WEDNESDAY, NOVEMBER 17: Hull and East Riding Chrysanthemum Society's show (two days); Royal Gardeners' Orphan Fund meeting; Kings Lynn Horticultural Society's show; Ulster Horticultural Society's show (two days); Buxton and District Chrysanthemum Society's show. THURSDAY, NOVEMBER 18: Newport and District Horticultural Society's show. FRIDAY, NOVEMBER 19: Whitley and Monkseaton Y.M.C. Association's show (two days). SATURDAY, NOVEMBER 20: Burnley Horticultural Society's show; British Mycological Society's London meeting at University College.

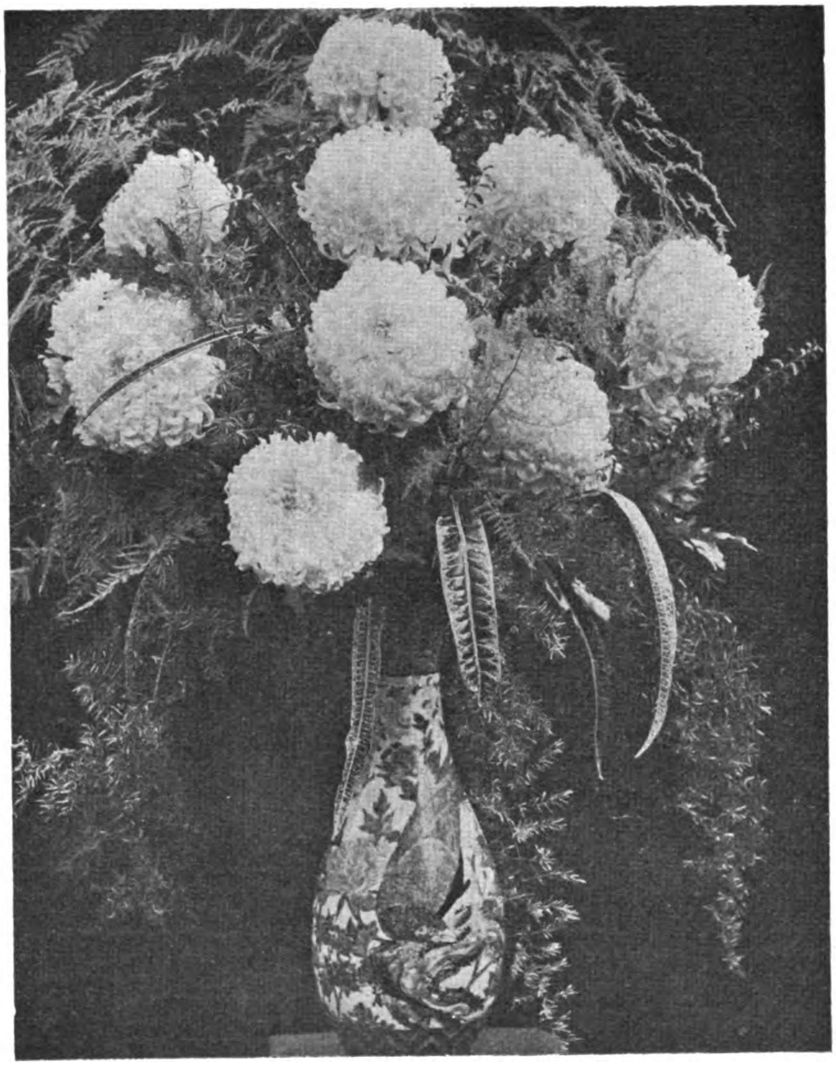

FIG. 176.—MISS HEDGE'S FIRST PRIZE VASE OF CHRYSANTHEMUMS AT THE NATIONAL CHRYSANTHEMUM SOCIETY'S SHOW ON NOVEMBER 4.

(see p. 397.)

"Gardeners' Chronicle" Seventy-five Years Ago.—*Ivy on Exterior Walls.*—The "Paper-hangers' and Upholsterers' Guide" may be right in considering Ivy to be a protector from damp; but a circumstance which I shall mention, leads me to think otherwise, and rather than select it "as, contrary to all trained fruit-bearing trees for eradicating damp," it is the last thing that I would employ for that purpose. There can be no doubt that the close, over-hanging, pendant leaves may carry off rain, and while the plants are young no danger need be apprehended; but as they get old the roots penetrate the walls, the lime becomes an entire mass of them, and loses its action. The roots then become conductors of damp into the masonry, and the thick exterior covering of leaves keeping the sun from the walls prevents the latter from ever becoming thoroughly dry. Being employed some three years ago in making extensive alterations in the groundwork here, more particularly in levelling the kitchen garden, it became necessary to remove an old tool-house the whole of which was covered with Ivy; it stood on gravel in the highest part of the grounds, the walls were built of stones, and about two feet thick, the whole of the roof was in good condition and perfectly dry, fires were lighted in rainy weather, or when doing inside jobs in winter; but, for some time previous to its removal, the walls were constantly damp, so much so, that during frosty weather the ice was of such thickness inside, that it could be removed in pieces, and the only reason I could assign for this was—that in demolishing it I found the roots of the Ivy reaching nearly through the wall and ramifying in all directions. *R. F., Fyvie, Aberdeen. Gard. Chron., November* 15, 1851.

Publications Received.—*A Simple Guide to Rock Gardening*, by Sir James L. Cotter, The Sheldon Press, Northumberland Avenue, W.C.2. Price 2/6.—*The Fruit Garden*, by A. J. Macself; Thornton Butterworth, Ltd., 15, Bedford Street, Strand, W.C. Price 6/- net.—*La Culture Commerciale des Raisins de table.* 1. Les Meilleures Variétés, by H. Latière, Librairie Spéciale Agricole, 58, rue Claude-Bernard Paris. Price 9 frs., post free.

The Week's Work.

THE ORCHID HOUSES.

By J. Collier, Gardener to Sir Jeremiah Colman, Bart., Gatton Park, Reigate, Surrey.

Evergreen Dendrobiums.—Plants of this section, which comprises such species as Dendrobium densiflorum, D. thyrsiflorum D. chrysotoxum and D. Farmeri, should be afforded a season of rest after their growth is completed. They should be placed in a house in which the temperature does not fall below 55° at night. They should not be allowed to become too dry at the roots, as their fleshy leaves should be maintained in a green, healthy condition. D. infundibulum and D. Jamesianum are also evergreen species. During the summer the cool Odontoglossum house is best suited to their requirements, but during the winter they should be placed in a house having an intermediate temperature and not be allowed to suffer from extreme dryness at the roots. D. Dearei is a summer-flowering species and should be given every encouragement to make free and healthy growth. These Orchids should be grown in a light position in a warm house.

Spring-flowering Dendrobiums.—Dendrobiums of the spring-flowering group, such as D. Wardianum, D. aureum, D. nobile and the many hybrids of these species, have completed their pseudo-bulbs and the plants should now be induced to rest for so long as possible. Only sufficient water should be afforded them to maintain them in a plump, healthy condition, and not enough to cause them to start into premature growth. They should be kept in fairly cool conditions, with as little fluctuation in the temperature as possible.

Odontoglossum citrosmum. — Plants of this species that are nearing the completion of their season's growth should be placed in a light position near to the roof-glass in a house having an intermediate temperature. The supply of water at the roots should be reduced gradually until after the new pseudo-bulbs are thoroughly developed, when moisture should be withheld for longer periods, affording only sufficient to keep them rigid. This treatment should be continued through the winter, and until the flower-spikes are seen to be pushing from the centre of the young growth.

Odontoglossum grande.—Plants of Odontoglossum grande that have passed out of bloom should be placed near the roof-glass in a cool house and rested. O. Insleayi is now producing its flower spikes and should be supplied liberally with water at the roots until after the flowers fade, when the plant should be given a season of rest.

THE KITCHEN GARDEN.

By F. Streeter, Gardener to Lord Leconfield, Petworth Park, Petworth, Sussex.

Endive.—Late-sown plants of Endive should be transferred to cold frames if this has not been done already. Take up the roots with a good ball of soil attached to them, and blanch the plants according to the demands of the establishment. Chicory and Dandelion will now blanch well and form a useful addition to winter salads. Keep the soil moist at the roots at all times, for if it is allowed to become dry the Endive will probably be very bitter and also damp off.

French Beans.—To maintain a succession of French Beans it will be advisable to make sowings in 24-sized pots every three weeks for the next few months. Select seven-inch or eight-inch pots that have been cleaned and well-crocked and half fill them with the following compost: two parts good loam, one part old Mushroom-bed manure and one part coarse sand or road grit, adding a six-inch potful of dry wood-ash and a five-inch potful of soot to each barrow-load of the compost. See that the latter is in a good condition for handling. Place about six or seven seeds in each pot and germinate them in a house having a minimum temperature of 60°. Very little water will be required, but syringe the pots slightly overhead with tepid water daily. Wherever possible, it is best to set aside a division of one of the warm pits for this crop. Fumigate the house or pit lightly about once a fortnight during the growing stage.

Tomatos for an Early Crop.—The present, if conditions permit, is a very suitable time to raise the first batch of Tomatos for fruiting next April and May, and will allow the removal of the winter-fruiting plants before they become infested with various pests, such as white fly and red spider. Prepare a number of six-inch pots and fill them with the following compost: two parts fine loam, one part burnt earth and one part sand mixed with a sprinkling of leaf-mould. Make the soil moderately firm and sow the seeds evenly and thinly. Raise the plants in a temperature of 60°, placing a piece of glass on each pot until the seeds have germinated. Keep a sharp watch for rats and mice; I have known these rodents to clear out the seeds and soil in one night in old houses, when the grower had no idea that such vermin were present.

HARDY FRUIT GARDEN.

By W. Auton, Gardener to Viscount Elveden, Pyrford Court, Woking, Surrey.

Planting.—All kinds of fruit trees should be planted as early as possible and no opportunity should be lost to complete the work soon. Deep planting should be guarded against for it is a not infrequent cause of infertile, gross wood and leaf growth. One of the greatest aids to the tree in the production of fruitful wood is to have a mass of fibrous roots near the surface, and deep planting prevents this condition to a large extent. In opening the holes for the trees the soil should be taken out in a circle larger than the spread of the roots so that they may be laid out horizontally in every direction. Any bruised or broken roots should be cut back to this point with a sharp knife. Where the stations have been prepared in advance the work of planting may be carried out quickly, but if this has not been done the sites should be prepared thoroughly before planting. It is best to plant when the soil is in a friable condition so that it may be worked amongst the roots and consolidated with uniformity, but if circumstances compel planting when the soil is wet it is a good plan to add some dry soil when laying out the roots. On the other hand if the soil is undesirably dry it is good policy to soak the roots thoroughly after planting. Trees planted at the foot of walls and against espaliers or other trellises should be loosely attached until final settling has taken place. Standard trees should be provided with substantial stakes at the time of planting. Any other trees needing support should also be staked at once. Tie the main stem of the tree securely to the stake with soft fillis to prevent it from being swayed by winds, until it is well-established. A mulching of partially-decayed manure is also of considerable benefit to newly-planted trees.

Plums.—Plum trees generally have a tendency to make very strong growth in the young stage and it is sometimes necessary to lift such trees to steady their growth and promote fruit-bearing. If this is considered necessary, advantage should be taken when carrying out the work of incorporating liberal quantities of mortar rubble with the soil. When planting Plums on walls ample space for extension should be allowed the trees, as if they are crowded they are seldom satisfactory. Early Transparent, Late Transparent and Oullin's Golden Gages are all worth the attention of the planter. Victoria, in spite of its susceptibility to silver leaf is a desirable Plum, suitable for growing on walls or as standards, and there are few varieties which fruit so consistently well. Early Rivers and Czar are two valuable varieties for early supplies. Jefferson, Kirke's and Coe's Golden Drop are excellent for midseason, while Monarch and President maintain late supplies.

Grease Bands.—These should be examined occasionally to remove dead insects which may have collected; make good the grease if its adhesiveness has been lowered by rains or exposure to the weather.

THE FLOWER GARDEN.

By F. C. Puddle, Gardener to Lord Aberconway, Bodnant, Taly-Cafn, North Wales.

Montbretias.—In well-drained soils the older varieties of Montbretia are hardy in most parts of the country; but the new, large-flowered varieties, such as His Majesty, Queen Alexandra, Nimbus, Queen Adelaide, Pocahontas and Joan of Arc, are better lifted, and the corms planted in frames for the winter. This will not only safeguard the plants, but will facilitate their propagation by inducing the stolons to grow early, enabling them to be taken from the parent plants in spring in time to form strong specimens for flowering the same season.

Winter Protection.—The recent cold weather is a warning that the time has arrived when preparation must be made for protecting any doubtfully hardy plants during times of severe frost. Perhaps the worst method of affording protection, if protection it may be called, is by placing semi-decayed manure or straw around the plants; this speedily becomes a sodden mass, depriving the soil of air and forming a cold, wet blanket rather than a warm covering. The efficiency of protecting materials depends largely on their quick-drying or moisture-resisting properties, and any coverings which are used should be chosen with this in view. Yuccas and similar plants including the more tender Kniphofias, such as K. Northiae, may have their leaves tied in bundles to protect the centre of the crowns, and in times of severe frost the stems may be covered with Wheat straw, placed perpendicularly, so that it does not hold moisture. Bamboos may have their growths bundled so that additional protection may be afforded them readily during times of exceptional severity. Any protection which may be given to tender shrubs growing against walls should be readily removable so that the plants may be exposed to the light and air during mild weather to guard against premature growth. Dry sacking, waterproof sheets or light hurdles thatched with straw, are excellent for this purpose.

Protecting Roses.—An excellent system of protecting Tea and Hybrid Tea Roses is practised in some of the north country nurseries by drawing the soil up to dwarf Roses in the same way that Potatos are earthed up. This method may be adopted for Roses in beds by heaping mounds of light soil around the stems of the plants, but care should be taken that these mounds are sufficiently high, for it should be borne in mind that it is the upper growth beyond the union of the graft which requires protection, and not the stock, which is perfectly hardy. Any additional soil which may be used for protective purposes should be completely removed in spring.

Fallen Leaves.—The work of collecting fallen leaves on garden paths and lawns will entail considerable labour during the next few weeks. In these days when there is a shortage of organic manure, healthy fallen leaves should on no account be burned, but after those necessary for making hot-beds and leaf-mould have been stored the remainder should be used for digging into the borders and for top-dressing Rhododendrons and other shrubs. The leaves may be tipped in heaps amongst the shrubs until all have fallen, when they may be spread over the beds and have just sufficient soil forked over them to prevent the wind blowing them away. Care should be taken not to injure the surface roots when digging the border. This top-dressing will greatly benefit the plants, moreover the covering and movement of the surface soil during winter will greatly assist in the destruction of small weeds, and thus save labour in hoeing during the spring.

FRUITS UNDER GLASS.

By T. PATEMAN, Gardener to SIR CHARLES NALL-CAIN, Brocket Hall, Hertfordshire.

Cucumbers.—Plants raised from seeds sown last August are cropping freely. It is a mistake to allow all the fruits to mature at this season of the year for that would result in the plants soon becoming exhausted. A night temperature of 60° to 65° should be maintained, with a rise during the day, when there is sunshine. Now that the plants are fruiting, they will be greatly benefited by frequent small top-dressings of turfy loam and leaf-mould; this will encourage surface rooting and greatly assist the crop. Water should be applied with care, and should be warmed to the temperature of the house.

Potting Orchard House Trees.—It is always wise to have in reserve a few trees of Apples, Pears, Plums, etc., to ensure a healthy stock of trees for the cold orchard house. Where trees have been grown specially for the purpose they should now be lifted and placed in pots varying from eight inches to twelve inches in diameter; there is no gain in placing them in larger receptacles, provided the roots can be accommodated comfortably in such pots. Allow a fair margin of space in the pot for top-dressing the roots during the growing season. All fruits that are grown in pots need a fairly heavy calcareous loam mixed with burnt earth, lime-rubble and bone-meal. The soil should be slightly on the dry side so that it may be made tolerably firm by ramming; in fact, too much stress cannot be laid on the importance of firm potting, providing the compost is in a suitable condition for this to be done. Before plunging the pots in ashes out-of-doors the roots should receive one good watering. Late trees that have been grown inside this season, and fruited, may still be potted if found necessary to do so, although this operation would have been best carried out as recommended, but as the trees will not be forced to any extent, roots being plentiful, it is surprising how such trees will fruit even after severe disturbance at the root.

Orchard House Figs.—These are the only trees which should not be stood out-of-doors during the winter as they are liable to injury. Where space is limited in the houses they may be stored in any old shed that is water-proof, provided they are covered completely with hay or, better still, Bracken fronds, after the leaves have fallen.

Orchard House Peaches.—If not already done the trees should be relieved of the old fruiting wood, and the weakest shoots of the current season, leaving only sufficient new growths to furnish the trees. Keep the borders in a proper state of moisture. I do not favour excessive watering at this season of the year as this only tends to produce unripened wood; at the same time, the roots should not be allowed to become excessively dry. Any trees that need replanting or root lifting should be attended to as quickly as possible while the leaves are still on the trees.

PLANTS UNDER GLASS.

By JOHN COUTTS, Assistant Curator, Royal Botanic Gardens, Kew.

Helleborus niger.—If Christmas Roses are required for Christmas decoration, strong clumps should now be placed in suitably-sized pots, and the latter stood in a cold frame or a cool greenhouse. If cut flowers only are required the roots may be packed into cold frames, or the plants may be covered where they are growing in the border, with frames or hand-lights, as slugs are fond of and cause a lot of damage to the flowers.

Pernettya mucronata, Aucuba japonica vera, and Skimmias.—Well-fruited specimens of these shrubs are very attractive and useful for furnishing the greenhouse at this season. They are hardy and may be utilised for the decoration of the unheated greenhouse. Suitable plants for the purpose may usually be purchased, if home-grown stock is not available. Small plants of Viburnum Tinus grown especially for this purpose are also very useful for the cold greenhouse.

Azaleas.—The indicum varieties of Azaleas, if required in flower about Christmas, should now be introduced to a warm house, but they should not be placed in a very warm temperature at first, for in common with most plants used for forcing, their development should be gradual. For early forcing, select varieties that flower early naturally; those that were forced early last year and completed their growth early are the best for this purpose. During bright weather the plants should be well syringed, as there is always a danger of attacks by thrips when the atmospheric conditions are dry.

Camellias.—These shrubs should, if necessary be cleansed thoroughly before the flower buds are far advanced; if large numbers of buds have formed it will be necessary to thin them out, otherwise many may drop. Another cause of bud-dropping is dryness at the roots. With the introduction of many fine, single-flowered varieties, Camellias are becoming increasingly popular. Some very charming varieties are C. magnoliaeflora, White Swan, Lady Clare and Kimberley. Camellia reticulata, with its large single, rose-red flowers, is, in some respects, the best of the family, and although it may be grown successfully in pots or tubs, it does best planted out in a bed in a conservatory. Stocks of this fine species are by no means plentiful, as many cultivators seem to experience a difficulty in propagating it; propagation is effected by side-grafting on stocks of C. japonica, but to ensure success the scion should be made of last year's wood.

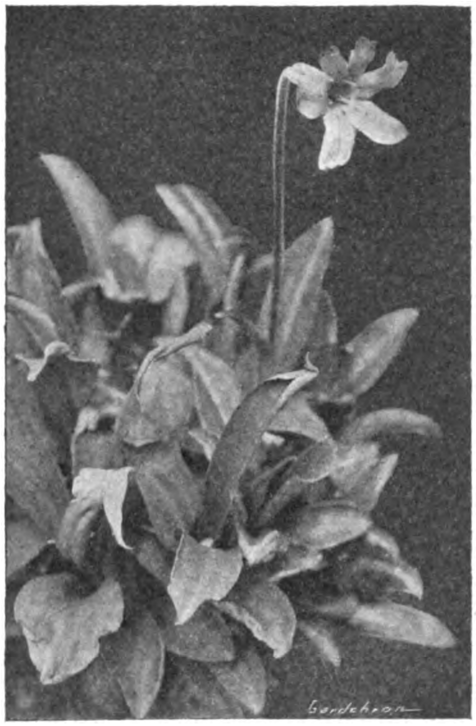

FIG. 177.—PRIMULA FRANCHETII.
(see p. 386.)

Acacia alata (syn. platyptera.)—This species is now in flower; it is one of the first of the Acacias to bloom, and is very useful for conservatory and greenhouse decoration at this time, not the least of its merits being the fact that it may be grown and flowered successfully in quite small pots This species is propagated by means of cuttings inserted during spring and early summer in pots of sandy soil, and rooted under a bell-glass in a cool greenhouse. Other Acacias that may be grown and flowered in small pots are A. diffusa, A. Drummondii, A. hastulata, A. pulchella A. armata and A. longifolia variety mucronata.

FOR NORTHERN GARDENERS.

By A. T. HARRISON, Gardener to the MARQUIS OF AILSA, Culzean Castle, Maybole, Ayrshire.

Planting Roses.—November is the best time to plant all kinds of Roses, and where the ground has been thoroughly prepared in advance, and the new Roses are to hand, this work should be done at once, provided the weather is open, and the soil in good working order. Should outside conditions prevent the immediate planting of Roses when they are received from the nurseryman, they should be unpacked and heeled-in for a time either in the open or among soil in an open shed, taking care that they are kept moderately moist, and not allowed to become dried out. In planting, it is advisable to have at hand a quantity of chopped turf to which may be added some bone-meal, and the whole turned over to mix the latter thoroughly with the turf. Each plant, when placed in position, should receive at least two good spades full of this new soil around its roots, making the latter quite firm by treading, and finishing off with the ordinary soil of the bed. Established Roses which have made strong growths during the current season should have their shoots reduced by one-half to prevent them being swayed backwards and forwards by the wind.

Asparagus.—The growths of Asparagus should now be cut back to within six inches of the ground, and weeds of an annual nature removed by hand; also the more troublesome perennial kinds by careful manipulation of the digging fork, taking care not to disturb the dormant crowns, for which reason the old stems are left longer than is sometimes recommended, viz., six inches, to mark their positions. The whole surface of the bed should afterwards receive a generous dressing of well-rotted manure. Where the Asparagus is grown in rows or ridges, the surface soil should be drawn into the alleys between, and the manure placed in position along both sides of the row, afterwards returning the soil, covering up the manure, and finishing by smoothing the earth with the back of a spade. Any stakes needing renewal should be replaced now so that they will be in readiness when required next season.

Bulbs.—Bulbs which were potted or boxed some weeks ago and the receptacles plunged in sand or ashes should now be examined. Any that are ready should be removed from their temporary covering and placed in a cool house or frame, from which they may be taken as required to the forcing house. If the bulbs are grown in an intermediate house with a temperature of between 45° and 50°, they will be ready in two or three weeks for the higher temperatures of the forcing house, which is better than transferring them into warmth from cold quarters direct. Any bulbs not showing signs of growth should be returned to the plunging-bed for a few more weeks. Bulbs grown in ornamental bowls are very popular, and these should be looked over frequently in the darkened room or store to make sure they are not suffering from lack of moisture It may be necessary to protect them from the depredations of mice, as these small creatures soon cause irreparable damage to bulbs.

Vegetables.—The final earthing up of late Celery should now be completed, and where severe frosts are experienced some light protective material such as strawy manure, should be placed in readiness in order that it may be placed on the tops of the plants when required, and as readily removed when milder weather ensues. Globe Artichokes should be protected with the same kind of material, packing it closely also around the clumps, while Lettuces and Endive growing in frames should have mats or similar coverings placed over them during frosty weather. Autumn Broccoli should be looked over at regular intervals, and the large, outside leaves doubled over the heads that are forming as although the plants themselves are hardy, it does not take many degrees of frost to damage the curds.

ALPINE GARDEN.

PRIMULA FRANCHETII.

In my garden in Perthshire I have a Primula growing under the name of P. Franchetii. This species is one of the Omphalogramma group and bears a solitary blossom, on a stem about six inches high, which opens before the full expansion of the leaves. The tube of the flower is about two-and-a-quarter inches long and the corolla two inches wide, of a purplish-blue colour, the throat of the tube having whitish stripes. I enclose a photograph, taken in June, when the plant flowered for the first time, and another (Fig. 177) taken at a later date when the leaves were more fully developed.

This species is growing in damp, stony soil and looks as though it will prove a good grower, as it has made three or four side shoots during the past autumn. *A. Harley, Blinkbonny, Kirkcaldy.*

FRAGRANT ALPINE PLANTS.

I find myself quietly chid by my friend Dr. Amsler (page 357) for mentioning Trifolium alpinum and no other species as an example of a scented alpine plant. I have not *The Gardeners' Chronicle* at hand to see exactly what I wrote in my note; but my intention was to draw attention to this attractive and neglected plant, and I pointed out that it is not only the flowers but the whole plant that is scented and, further, that it throws its scent far and wide. It was good to have my memory carried back to the flower fields of Le Lantaret, with its sheets of Daphne striata and certainly not only Daphne striata throws its scent abroad but D. Cneorum too, and D. Mezereum and D. rupestris—when one can get enough of it. I have walked through the roadside woods near Cortina in the Dolomites when the mingled scent of the Pines and of Daphne Cneorum was almost too heady and powerful—delicious though it was.

The fragrance of some of the Primulas is one of the pleasantest scents I know, but my recollection is that the Primulas, unlike Trifolium alpinum and Daphne, are "fast of their scent"; their range is comparatively short. I think I am right in stating that the percentage of alpine flowers which are fragrant is on the low side, though one can name some gloriously-scented alpines. Those delicious little ground Orchids, the Nigritellas and the Habenarias: Thlaspi rotundifolia and Draba pyrenaica are both honey scented, and Arnica montana gives off a very subtle fragrance, especially on a warm day. One could name quite a lot; yet, off-hand, at any rate, the fragrant alpines which disperse their scent abroad do not come readily to mind, and are not, I think, common. The only others, in fact, besides those already mentioned, that I can think of off-hand are Rocket (Hesperis matronalis) and a certain Potentilla which I had many years ago and have since lost. Rocket is perhaps more of a sub-alpine than a true alpine. I have only found it wild once, and that was fairly high up in the central Pyrenees. Its power of dispensing its scent around—at night—is remarkable.

The Potentilla was given me without name. It was a mat-forming species, a great spreader, with silky, downy leaves and yellow flowers; rather a dull thing to look at. It quickly spread into a mat a yard or more across, and on a still, hot day it gave off a delicious aromatic scent very much like pencil-Cedar wood; in fact, much like that excellent shrub the true Veronica cupressoides, and, like the Veronica, the Potentilla would waft its fragrance far around on any hot, still day.

It was not, by the way, from any grudge I owe this plant that I did not mention Daphne striata in my original note, but only my "deplorable lack of memory." I owe the plant no grudge, but I do wish someone would tell me how to grow it. I entirely disagree with all the hard things Farrer used to say about it. D. Cneorum is a glorious plant, but because its flowers are larger than those of D. striata, and a deep warm pink, where D. striata is a cooler lilac-pink. I see no reason to decry D. striata. But there is no doubt about D. striata being most difficult to grow. I have bought plants and I have collected them, both with perfectly good roots, yet always they have died with great promptness. One year I went to Le Lantaret and found D, striata in full fruit. The bushes were smothered with countless berries, like tiny Oranges or Tomatos. "Here," I thought, "is an opportunity to furnish a grateful world with jolly little seedlings of D. striata, neatly grown in pots—roots complete. Seed, thought I, is the secret, and now we shall all grow D. striata"; and on my hands and knees I harvested seeds until I began to see visions of Daphne striata a commonplace of coster's barrows. But the reluctance with which that seed germinated was only exceeded by the cheerfulness with which the seedlings perished! Not one ever grew to flowering size. Can any one tell me how to grow this delicious but tiresome plant? Grafting might solve the difficulty, and if I can obtain scions I will try. *Clarence Elliott, Stevenage.*

BULB GARDEN.

THE HARDY PANCRATIUMS.

Lovers of uncommon bulbous plants are often desirous of growing Pancratiums in the open, but it is undeniable that by far the greater number of the species in cultivation are too tender for growing out of doors in average gardens. There are, however, two species of which it may be said that one or other of them may be tried with every prospect of success by those possessed of gardens in mild localities, especially near the sea. The hardier of the two is the beautiful, June-flowering Pancratium illyricum, which, in seaside gardens, even north of the Tweed, is quite satisfactory if planted in well-drained soil in a warm part of the garden. It is a highly attractive plant, with large, rather pear-shaped bulbs, greyish-green leaves, and bears in an umbel at the top of the stem, from six to twelve charming, sweetly-scented, white flowers. Its height is from one to two feet.

P. maritimum, which comes from the Mediterranean, has also been successfully cultivated in warm southern gardens, but is a trifle more tender than P. illyricum. It has round bulbs, narrowish grey-green leaves, and bears umbels of from six to eight fragrant white flowers on stems about a foot high.

These bulbs should be planted in autumn at a depth of six inches, and it is advisable to cover the place during the first winter with a layer of ashes or dry litter. The position should be a sunny one and the soil light and well-drained.

These bulbs look best when planted in a mass or group, although the item of expense may prevent planting in quantity. Still, they are not exceedingly costly, the price of P. illyricum ranging from 10d. to 1s. 6d. per bulb, and that of P. maritimum, from 7d. to 1s. *S. Arnott.*

WILD GARDEN.

THE WILLOW GENTIAN.

The sub-alpine Gentiana asclepiadea is a great acquisition to the wild garden or waterside at this season for, commencing to flower in August, it will often continue to bloom until autumn is far advanced.

The arching growths of typical G. asclepiadea, set with pairs of oval-pointed, dark green leaves, extend to twenty-four or thirty inches, and bear in the leaf axils large, wide trumpet flowers of a deep, rich blue. Few Gentians known to me vary so greatly as this one, the colour of the flowers ranging from an intense violet to a pale china-blue, and there is the well-known and very lovely pure white variety.

G. asclepiadea comes fairly true to colour from seeds. The differences referred to may have arisen in gardens, but geographical range also plays a part, the blooms of one locality not infrequently being different in shade from those of another. And so it appears to be regarding stature and habit of growth, for one may get G. asclepiadea much taller than the average height given above as well as much shorter. There is a perfectly upright and rigid form with flowers of the deepest indigo, a most distinctive plant.

These Willow Gentians are among the easiest of their race to deal with, thriving in almost any soil or situation, but they always, to my mind, look more at home in the half-shade of woods than anywhere else. The seeds germinate very readily, and many of the seedlings will begin flowering in their second year. As small plants transplant better than old ones, the seedlings are best put out so soon as possible. Once established they will go on increasing in size and beauty for many years, and this without needing any attention.

GERANIUM LOWEI.

Though a biennial, Geranium Lowei is well worth growing in the wild garden where, in light soil, it will soon become naturalised. In appearance it at once suggests the common Herb-Robert, but its stout, branching, blood-red flower stalks ascend to at least two feet, and the prettily-cut leaves are often over six inches across. If the inch-wide blossoms, which are the same shade of red as the native species mentioned, are not particularly attractive, the plant as a whole is decidedly beautiful from the seedling stage on to the autumn of its second year, when the bright crimson of its dying leaves and stems is among the most brilliant tints of the season. *A. T. J.*

HARDY FLOWER BORDER.

THE DOUBLE EVENING PRIMROSES.

The Evening Primroses have generally single flowers, and these are of great beauty, as a rule. Those which bloom during the day and do not wait until the evening to expand their flowers are of considerable value in the border, and these have given us the only double-flowered plants among the genus.

Œnothera Youngii plena has been for many years in cultivation. It grows about a foot or eighteen inches high and has double flowers of a good, though not intense yellow. It has been grown in borders for many years, but has become a scarce plant. Its chief defect is that its stems are weak and require the support of a stake.

Another double form, which has been in cultivation for a considerable number of years is M. Cuthbertson. I see this sometimes appearing in gardens and catalogues as Œ.Wm. or W. Cuthbertson. This is a mistake, as it was raised by Mr. Michael Cuthbertson and named after him. Œ. M. Cuthbertson is a seedling of Œ. fruticosa Fraseri, and has all the good qualities of that erect-growing, day-flowering Evening Primrose, with the addition of having double flowers. It is a sturdier plant than Œ.Youngii plena, has brighter flowers and holds its stems more erectly. It grows a foot or eighteen inches high and is a capital border plant. In case of any doubt as to the identity of this plant, some of the lower leaves are dotted with red, as in the single form of Œ. Fraseri.

These double Evening Primroses need to be grown in fertile soil and in situations exposed to the sun. They are easily increased by division. *S. Arnott.*

MORISIA HYPOGAEA.

This very beautiful alpine is, unfortunately, sometimes difficult of cultivation, and is sometimes long in finding congenial surroundings.

I have had it in fine form on the sunny, southern slope of a rock garden, its roots growing in a good depth of moist, but well-drained loam, and the rosettes reclining upon a surfacing of sand and grit.

I have also seen very fine examples in small pots, growing in very gritty soil. It would appear that this delightful little plant enjoys full sunshine, a moist, but well-drained root-run, and some dry material around its collar;

some protection from excessive winter days is advisable.

When in really good form, M. hypogaea always attracts a full meed of attention and admiration, the yellow flowers, very large for so tiny a plant, and very bright, contrasting pleasingly with the small rosettes of serrated and fresh green leaves. A well-flowered pan of this plant is always a fine feature in an alpine house. *Ralph E. Arnold.*

PHORMIUM TENAX.

At the beginning of the present century, Phormium tenax, as a garden plant, was rather under a cloud, for it had not come any too well out of the trials to which English gardens were subjected by the cold winters of the closing years of last century—trials which left their mark on the trend of outdoor gardening for many years. But since then there has been no cold weather sufficiently prolonged to do the species more than passing injury, and to-day it is found in many gardens. There are probably few of them near London in which there is to be found a specimen to compare with the plant illustrated in Fig. 178, which, although turned out of a pot as a tiny plant just six years ago, is now eight feet high to the tips of the upright leaves, and no less than twelve feet to the topmost flower—a veritable giant.

For a year or two after the plant was put out it had some protection in winter, but for the last three years it has outgrown protection, and possibly the need for it, as when the writer saw the plant in August last, it showed no trace of the hard weather of last January, of which the Horsham district had its share. The soil of the garden at St. Leonard's Park is a sandy loam rather on the heavy side, and evidently as much to the liking of Phormium tenax as to that of Lilium auratum, which seems to grow to better purpose there than elsewhere in the south.

Phormium tenax has long been known for the remarkable tensile strength of the leaves, a quality which was brought home to the writer many years ago by the late Mr. Henry Elwes. Selecting a leaf from one of the writer's plants, Mr. Elwes passed it over a low-growing bough of an Oak tree, and twisting the ends round the knuckles of each hand, lifted himself momentarily from the ground. Those who knew Mr. Elwes will not need to be reminded that his weight was nearer fourteen stone than twelve.

The practical uses of a leaf of this kind have long been known, and in the *Annual Register* (1819) there was a report of the fact that ropes made from the fibre of Phormium had been tested in the Royal Dockyard at Portsmouth and proved satisfactory. It is not clear, however, that such ropes ever came into regular use in the navy. In one of his books, *Flowers*, Sir Herbert Maxwell advocates the use of strips of Phormium tenax for tying purposes, and, practising his own precepts, often sends his friends parcels of plants tied up with Phormium fibre in place of string.

In *Plants of New Zealand* we read that: "The settler is never in want of a piece of twine with a flax bush growing near his home. He has merely to take one of the long leaves and tear a strip from it, and he holds in his hands a piece of string that it is almost impossible to break. The fibre is stronger than that of any other flax, but is also more brittle when twisted. In dealing with it, the natives, after having cut it down and brought it home green in bundles, scrape it with large mussel-shell, and take the heart out of it, splitting it with their thumb nails. They throw away the outside and spread out the rest in the sun to dry, which makes it as white as snow. They spin it in a double thread, with the hand on the thigh, and then work it into mats, also by hand."

Microscopical examination of the leaf reveals the source of its tensile strength. "The blade is intersected longitudinally by large numbers of plates of strong-walled fibres, placed transversely to the breadth of the leaf. Between each pair of plates there are strands of similar fibres, running along the surface immediately below the skin. Thus a considerable amount of rigidity accompanied by most unusual strength is developed in the leaves. The rigidity enables them, in spite of their length, to stand vertically; and their great strength prevents them from being whipped to pieces by the wind. The tenacity of the fibres arises chiefly from the fact that the cells of which they are composed are dry and hard, filled only with air, and have very much thickened cell walls. Schwendener has calculated that the sustaining power of such cells is equal to that of the best wrought iron or hammered steel, while their ductility is from ten to fifteen times as great as that of iron."*

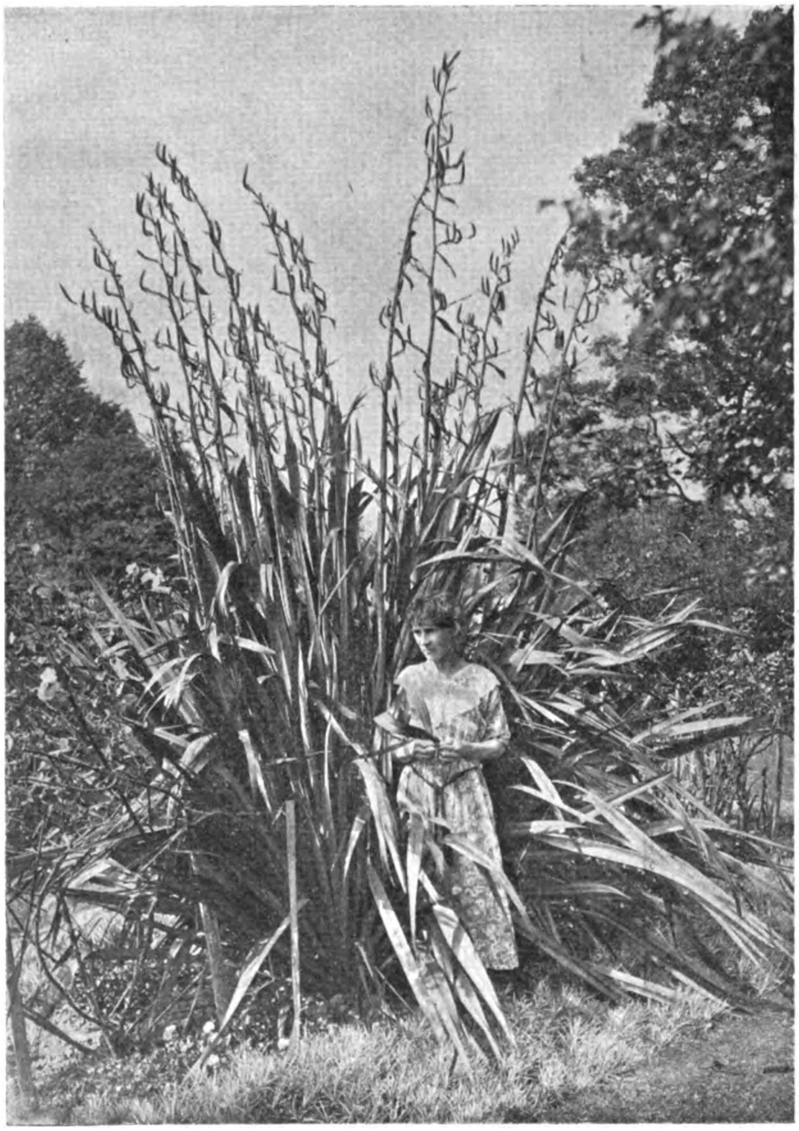

FIG. 178.—PHORMIUM TENAX IN A SUSSEX GARDEN.

There is a regular market in the fibre of Phormium, and quantities of it are annually exported from New Zealand. From time to time attempts have been made to grow Phormium tenax on a commercial scale in the south and west of Ireland, where the climate with its warmth, humidity and general lack of winter frosts is doubtless more congenial to the plant than that of most parts of Britain; but except in the case of the pioneer, the late Lord Ventry, the cultivation of the plant does not seem to have been undertaken in a determined spirit. Lord Ventry began experimenting with Phormium as a commercial crop about twenty years ago on his estate at Burnham, in County Kerry, and according to Sir Frederick Moore, persisted in the cultivation of it till he died, a few years ago. With a view to the raising of a hardier stock than was then available, Lord Ventry imported both seeds and plants from different districts of New Zealand, raised seedlings in wholesale fashion, and proved that the production of the leaf could be made profitable. Lord Ventry's crops were grown in light, gravelly loam with ample moisture close to the surface, and Sir Frederick Moore noticed that the plants grew much more luxuriantly in that soil than in the peat bogs of the country.

To be seen at its best, Phormium tenax needs a warm autumn such as we have had in the south of England this year, and then the curious, bronzy flowers are worth more than a passing glance. In hot weather they are as prolific of nectar as Lilium speciosum Kraetzeri, and that is saying a good deal. The honey attracts swarms of insects, and the smaller birds enjoy a sip of the nectar.

Cordyline australis is another Antipodean plant of which the leaves furnish fibre of unusual strength, and Aciphylla is a third. The leaf of that fine, but all too little known, South African hardy plant, Moraea spathacea, is so strong that the individual who can break it by a direct pull must be unusually virile. *A. Grove.*

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* *Plants of New Zealand*, 2nd edit., p. 107 (1907).

INDOOR PLANTS.

IMPATIENS SULTANII.

Amongst the few subjects that brighten the greenhouse in the autumn, it is well to include this plant, for it will flower right into the middle of winter if treated carefully.

For autumn flowering it is best to insert the cuttings in July, when they root very speedily. Pot them singly, and ultimately place them in five-inch pots filled with fairly rich soil. Pot firmly, place the plants in a frame, and stop them several times to promote bushy growth, Early in October they should be brought into a greenhouse, where they will immediately give a wealth of flowers.

There are several hybrids, some bearing flowers much larger than those of I. Sultanii, of white, soft and deep pink, and the brilliant crimson-scarlet I. Holstii. I. Miltonia is a particularly beautiful variety, which, in all but size, somewhat resembles its Orchid namesake. Seeds sown in the spring in a cool house offer another easy method of raising a stock of Impatiens

SPRING SOWING OF CLARKIA.

One of the difficulties in growing Clarkias during the winter is preventing even good-sized plants from damping off, for no matter how careful the grower may be the soft texture of the stem makes the plants very susceptible to damp.

A good alternative is to sow in January, when, if grown on without undue check, the the plants will flower almost so soon as the autumn-sown ones. Sow thinly, and prick out the seedlings so soon as they can be handled and grow them in a temperature of 55°. Pot them on until they are in thirty-two-sized pots, which are quite large enough for the final shift. Clarkias being gross feeders, let the final soil be rich, and always keep fresh air circulating in the house. Water the roots with great care always and place stakes to the plant so soon as support is necessary. Plants grown in the spring are usually very symmetrical and far more decorative than the abnormally large ones from autumn sowings. *J. S. D.*

BERTOLONIAS.

These dwarf-growing Melastomads are exceedingly beautiful and attractive plants when well-grown, and should find a place in every collection of stove plants. One of the most important details in their cultivation is to pot them in soil of a light, open character so that the roots may ramify freely throughout the compost. A compost made up of equal parts of good Oak leaf-soil, fibrous peat and sharp sand, with a sprinkling of charcoal nodules suits them admirably.

The pots should be drained sufficiently, for the plants when growing freely require an abundance of moisture at the roots and any sourness of soil arising through it remaining in a saturated state for any considerable period must be guarded against. They also require moderate amounts of water during the winter, as if allowed to suffer from dryness a large proportion of the lower leaves will quickly assume a yellow appearance and ultimately fall off. A humid atmosphere is also of great importance in preserving that beautiful, fresh, velvety appearance natural to the leaves when produced under favourable conditions. For this reason the plants should be protected with bell-glasses which will materially assist in maintaining a uniform degree of humidity around the foliage, and also protect them from currents of air. Air is, however, necessary for the full development of the exquisite markings and spots in the leaves, and a healthy condition of the atmosphere under the bell-glasses must be maintained by admitting air for a few hours daily.

Shade is essential during bright weather in the summer to prevent injury to the leaves, but it should not be too dense, and if it is not necessary to shade the house for other subjects the bell-glasses may be covered with tissue paper when necessary.

The spring is the most suitable season for increasing the stock, but cuttings may be rooted at almost any time when obtainable, if plunged in strong bottom-heat and protected by a bell-glass.

In the case of established specimens, it is a good plan to plunge the pots in others about two sizes larger and cover with glasses large enough to fit the larger-sized receptacles as considerably more space is thus afforded for the development of the foliage.

Amongst the most desirable Bertolonias for general culture are B. guttata, a rather strong-growing species with ovate leaves, profusely marked with rose-coloured spots on an olive-green ground; B. margaritacea superba, a splendid variety of one of the most beautiful forms with rather large leaves of deep olive ground, shaded purple along the ridge and dotted with clear circular spots; and B. Van Houttei, the leaves of which are beautifully veined and spotted with carmine. *A. P. C.*

ROSE GARDEN.

OLD FRAGRANT ROSES.

The following varieties of Roses are, to my mind, some of the most hardy and brilliant in colour, as well as delightfully fragrant. Hard pruning should be resorted to in most of the undermentioned varieties.

The Provence, or Old Cabbage Rose, is deliciously perfumed, and its scent brings to memory days of long ago. Many posies of this variety have I culled, when a boy, from a large old bush a few feet from the door of a thatched cottage, and how my mother prized her plant! This Rose received no pruning but was just left alone, with a winter dressing of short pig manure. Soap suds were dashed over it once a week to prevent insects from attacking it. The flowers are rose-colour, globular, very large and full. A bed of the old Cabbage Rose should find a place in every garden. It has been known since 1596. La France was a general favourite at one time. It was introduced in 1867 by Messrs. Guillot fils. The colour is a most beautiful satin-pink and pale flesh. The flowers are large, of ideal shape, very highly perfumed and most beautiful. It makes a fine pot Rose.

Ulrich Brunner was introduced by Levet in 1882. The late Mr. J. Cranston told me that Mr. Paul, Mr. Davidson and himself took a summer trip to France, calling on Mons. Levet, and there saw this Rose growing on a border, between two streams, a season or so before its introduction; Mr. Cranston offered £60 for the stock, but the raiser of so beautiful a flower would not accept it. Ulrich Brunner was for many years an ideal show bloom. The colour is carmine-rose; the bloom is very large and of good shape.

Mrs. John Laing, H.P., is a beautiful fragrant pink Rose. The flowers are of perfect form and produced abundantly; they are highly fragrant. This fine Rose was introduced by Bennett in 1886. Unfortunately, this variety is usually attacked very badly towards the end of the season with mildew, but it is not so subject to this disease when growing under glass. The finest crop I ever saw, was at Crawley Court Gardens, over forty years ago, on bushes planted out in sunk pits in a house with a temperature of about 55°.

Horace Vernet is a superb Rose, the flowers large, full, and of a most perfectly imbricated form. It was introduced by Messrs. Guillot fils in 1866. The colour is rich, brilliant velvety crimson; the petals are large and smooth. A box of twelve show blooms of this superb Rose will find numerous admirers. The variety is also splendid for use as cut blooms in vases, and is especially effective seen under artificial light.

Louis van Houtte was introduced by Lacharme in 1869, and proved one of the best of this raiser's introductions. The colour is deep amaranth, shaded with dark claret; it is a fine, distinct Rose and very fragrant. The flowers are cupped and well-formed.

Abel Carriere is one of the best dark Roses: the flowers are of good shape, and dark velvety crimson. The bush is of vigorous growth. This Rose was introduced by Mr. E. Verdier in 1875, and in its day won many honours. Xavier Olibo is a Rose of superb quality when grown on a stiff soil; the rich, velvety crimson colour, with no shading, withstands sun much better than many of the newer Roses. Duke of Edinburgh was introduced by Messrs. Paul and Son in 1868: the colour is rich velvety crimson, with shadings. The flowers are large and attractive, fragrant, and in all respects superb. Charles Lefebvre is another of Lacharme's raising, introduced in 1861. The flowers are large and of fine form. The colour is rich shaded velvety-crimson: it is a Rose of great excellence. Captain Christy was raised by Lacharne and put into commerce in 1873; it is a great favourite for pot culture, and in my young gardening days I had charge of over three hundred pot Roses of this variety. The colour is blush, the centre of the bloom having delicate flesh shadings. The flower is full, large and beautifully formed. Souvenir de Malmaison (Bourbon) is a superb Rose grown as a standard. It makes clean growth, has beautiful blush flowers with the centre flesh-tinted. It is a very large Rose and one of the finest grown. It was introduced by Beluze in 1843.

In 1887, whilst following my occupation as a foreman in a large garden in Derbyshire. I counted eighty-five beautifully developed flowers of this showy Rose on a tall standard, and when given charge it was my pleasure to introduce many more plants of Souvenir de la Malmaison in the Rose garden. *G. L.*

A ROSE OF STERLING MERIT.

Never with greater confidence have I advocated the widespread planting of a new Rose than I now have in urging upon all who seek a variety of sterling merit the claims of the variety Lady Sylvia. It is a derivative of Ophelia, and a moment's pause may be granted to take note of the unusual generosity of this deservedly popular variety. Madame Butterfly is a sport from Ophelia, which has also given us a climbing sport, and a so-called "white" Ophelia which may be considered the least important of the family because, although a pleasing flower, it is not white.

Lady Sylvia is a sport from Madame Butterfly, and a bonnie child of its parent and grandparent. The first thing that impresses one about the flower is that its colour is extremely beautiful. Madame Butterfly carries a livelier and brighter colour than Ophelia, hence its widespread popularity, but Lady Sylvia is so much brighter and richer that the superiority of Madame Butterfly is wrested from her. The chief colour of Lady Sylvia is a shade which may be described as "Chatenay" pink, but the flower is more luminous than Madame Abel Chatenay because it is richly suffused with a golden glow which melts into the pink.

Colour alone does not sum up the merits of this Rose; it is a flower of elegant form and wonderful staying power. My daughter has worn one bloom from morning until evening on three consecutive days, and I have had a vase of blooms in my writing room for eight days without a petal falling. Vigour of growth is all that can be desired. Even so late as October 18, beds in the open at its birthplace in Hoddesden were still carrying characteristic flowers and a profusion of promising buds whilst under glass—it was at Mr. Walter Steven's Rose nursery, where thousands of plants are grown under glass for market—two-year-old plants were holding up an abundance of blooms and buds at a height that would exceed the average height of Englishmen.

This, in fact, is one of the strongest points in favour of the Rose; it is exceptionally good under glass, both very late and very early in the year. We have so many new Roses which when put to the test reveal no outstanding virtues, that one may be justified in paying generous tribute to one that seems to possess sterling merit. *A. J. Macself.*

TREES AND SHRUBS.

PICEA BREWERIANA.

Brewer's Weeping Spruce is an interesting species that is proving under cultivation to be a distinct and attractive tree. It is a native of the Siskiyou Mountains of North-west California, and south-west Oregon, generally growing in the vicinity of seven-thousand feet. It is by no means a common tree, growing only in a few localities.

Professor Brewer, after whom the tree is named, was the first to discover it in 1863. Nothing more appears to have been recorded of the tree until the Californian botanist, Mr. T. Howell, collected and described it in 1884.

The first plant to reach this country was sent to Kew by Professor Sargent of the Arnold Arboretum in 1897. This tree, growing near the Pagoda, is now an attractive specimen, fifteen feet in height, very well furnished to the ground with branches. These, near the ground, have a spread of twelve feet diameter. The tree first bore cones in 1920. There are cones at present on the tree, the accompanying illustration (Fig. 179) depicting two on a small spray.

In its native habitat, P. Breweriana becomes a tree eighty feet to one hundred and twenty feet in height, and photographs of native specimens depict its striking, pendulous branches. The leaves are from one inch to one-and-a-quarter-inch long. The cones are oblong, tapering at both ends, three inches to five inches long, three-quarters to one inch broad at the centre. P. Breweriana is distinct among the flat-leaved Spruces in its weeping habit of growth, hairy shoots and leaves convex on both surfaces. *A. Osborn.*

ROBINIA PSEUDACACIA.

Fine trees of the False Acacia may be seen in the neighbourhood of Busbridge, Surrey, and a most graceful aspect they present either in foliage or flower.

This is, however, a tree which, owing to the brittleness of its wood, cannot be recommended for all positions, as it is liable to suffer great damage from rough winds when planted in exposed places; even stout limbs may be snapped off.

It is interesting to see the frequency of this species hereabouts, as I believe it was to this district it came first, when introduced by William Cobbett, the rural economist, who thought it had a great future before it as a saleable timber for certain naval construction purposes. *E. J. Platt.*

ERICA MEDITERRANEA.

There is no spring-flowering Heath to compare with the subject of this note which, from March to June, will provide masses of its purple, honey-scented flowers on stately bushes of four to five feet, or even more.

The variety sometimes listed as E. m. superba is even better than the type, the habit being denser, the flower trusses bolder, and the foliage rather a darker green. Then there is the distinctive Irish form (E. m. hibernica, or glauca), with a bluish tint to its foliage, and the very dwarf variety, nana. The white form, alba, is not only worthy of the type but it is, without exception, the best of all the dwarfer, white-flowered, spring and summer-flowering Heaths, and should be widely grown wherever conditions permit.

E. mediterranea is so hardy that it will prosper in all but the bleakest localities. At Kew and round about London it does splendidly. Though many authorities assert that E. mediterranea grows only in the Biscayan side of France and Spain, and that it has, therefore, no real right to the specific name it bears, I have seen it growing in considerable quantities in the Var district of France. There, between Hyeres and San Raphael, it may be found in many a hillside glen, sharing the rocky ground and streamsides with E. arborea, E. lusitanica, Cistus monspeliensis, C. albidus and other similar shrubs. *A. T. Johnson.*

PYRACANTHA GIBBSII.

This is an excellent evergreen shrub of rapid growth, and apparently quite hardy. It is a Chinese species of the Pyracantha group with many typical points of resemblance to other well-known species.

The vigorous character of its growth makes it particularly useful where quick results are desired. A small plant put in three or four years ago in an open bed has already become too large for the effect for which it was originally intended. It is well, therefore, to keep it at the back of any border or shrubs.

The plant produces masses of small white flowers in the greatest profusion, and these are followed in due course by a large crop of fruits which ripen off somewhat late in the season. These ultimately take on a brilliant bright red colouring and, failing the depredations of birds, give a most welcome display of colour far into the winter. Propagation is very readily effected by layering. *Howard H. Crane.*

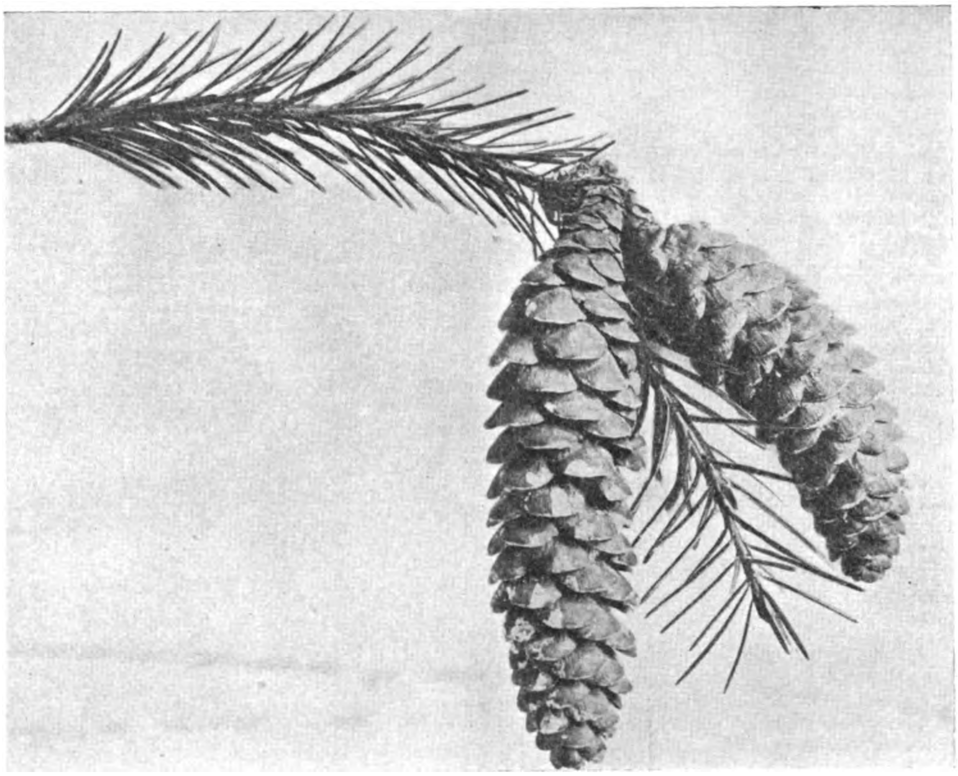

FIG. 179.—BRANCHLET AND CONES OF PICEA BREWERIANA.

DECIDUOUS AZALEAS.

Although these plants are now included under Rhododendron, Azalea is a useful and distinctive name for garden purposes as applied to a very large group of shrubs, which by reason of their brilliant colours occupy a high position among hardy-flowering kinds. They are extremely valuable for their gorgeous colouring in spring and early summer, and many of them have a further period of striking beauty in autumn, when the rich crimson, scarlet, gold and bronze tints of their foliage make a conspicuous feature in large plantations. These Azaleas thrive in any lime-free soil, although a peaty ground is preferable, because there is less liability of the plants suffering from dryness at the roots, of which they are very impatient. When planted in loamy soils liberal quantities of vegetable refuse should be dug in when preparing the ground. The close masses of fine, fibrous roots enable the plants to be lifted with good balls, thus facilitating planting at all times between November and March, but early planting is preferable and should be done whenever possible.

As is the case with all very fine-rooted subjects firm planting is a most important detail and thorough consolidation of the soil when planting should be made a strong point. The mulching of the beds after planting is also an important item in culture, indeed, an annual mulching in spring with decayed vegetable manure is of very great benefit to these plants, particularly on light soils, as besides supplying nutriment it is very helpful in promoting that cool rooting-medium which is so desirable.

Equally important is the removal of seed pods so soon as the flowers have fallen, or vigorous growth will be considerably handicapped.

The chief sections are the so-called Ghent Azaleas, and that known in nurseries as Azalea mollis × sinensis. The members of the latter section are very popular, have larger flowers and are perhaps richer in colour than those of the Ghent section, but being early-flowering they are liable to injury from spring frosts, hence it is wise to choose sheltered positions in the woodland garden where the sun's rays will not reach the plants immediately after a late frost. There is a wealth of named varieties of great merit amongst which may be mentioned Alphonse Lavallée, flame red; Anthony Koster, rich gold; T. J. Seidel, salmon red; Queen Alexandra, orange salmon; Floradora, red; and J. C. Van Thol, fiery red.

The Ghent section flowers later and is thus more suitable for planting in open positions in the garden. Although the flowers are smaller they are equally beautiful and have the additional quality of delicious fragrance. Named varieties of outstanding merit are also very numerous, and it would be difficult to select the best six sorts, but the following are exceedingly good. Nancy Waterer, Indian yellow; Roi de Belges, pink; Ignea Nova, carmine; Gloria Mundi, salmon, flushed orange; coccinea speciosa, orange-scarlet; and Sang de Gentbruggé, crimson. *A. P. C.*

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CLASSICAL AND LEGENDARY GARDENS.

XII.—EARLY GREEK GARDEN-CRAFT.

I PASS from the study of the garden as it occurs in legend and myth to that of the Greek people, and to the historical and classical records. The principal word in Greek for a garden was *kepos*, a term which has also been translated orchard, lawn, plain and plantation. It was employed when speaking of the enclosure for the Olympic Games as well. There is some doubt as to its etymology. While some refer it to *kapo* or *kapto*, "to gulp down," or "swallow greedily"; others with greater reason derive it from the verb *skaptein* (with the loss of the initial letter), meaning "to dig." Thus it is connected with camp, *campus*, and the German *hof*, as well as with schaffen, shape skep, scoop, and many other familiar words. It occurs in Homer, in a passage which Pope thus translates, using the word "plain" instead of garden, partly for the sake of the rhyme :—

> As full-blown Poppies overcharged with rain
> Decline the head, and drooping, kiss the plain.
> *Il.* 8, 306.

Purves gives the passage in prose: "His head hung down, like a Poppy-head, that droops in a garden, weighed down with seeds, and with the rains of spring."

The classical passage, however, is in the Odyssey, vii, 129 seq. Pope reads as follows :—

> Close to the gates a spacious garden lies,
> From storms defended and inclement skies.
> Four acres was the allotted space of ground,
> Fenced with a green enclosure all round.
> Tall thriving trees confessed the fruitful mould :
> The reddening Apple ripens here to gold;
> Here the blue Fig with luscious juice o'erflows;
> With deeper red the full Pomegranate glows ;
> The branch here bends beneath the weighty Pear,
> And verdant Olives flourish round the year.

* * * * *

> Beds of all various herbs, for ever green,
> In beauteous order terminate the scene.

Such was the famous garden of Alcinous, and it shows what kinds of fruits were cultivated, how the garden was laid out and what were its adornments. The evergreen hedge, the beds of herbs, the clustering vine, the fountain and the conduits for watering the soil are all here, and enable us to form a very accurate idea of the early Greek garden. Laertes, the father of Ulysses, also found delight in a beautiful garden, whence the pleasure which Ulysses took in that of Alcinous.

In addition to the word *kepos*, we find in Homer the term *orchatos*, whence Milton's Orchat. This is quite distinct in etymology from orchard, although the two words closely resemble each other in form and meaning. Orchatos is derived from *orchos*, "a row of trees," or, as some think, from *oruchein*, "to dig." A fully-equipped garden was said to consist of three departments. One of these was devoted to trees, another to the vine, and a third to the herb border where grew the vegetables, potherbs, greens and garden stuff generally. The part devoted to the vine was also named Alo, whence the term *aloites*, a gardener or husbandman. Such was the garden of Alcinous, as we find if we read the whole passage from which the foregoing quotation has been taken.

This fact respecting the triple division of the garden is of peculiar interest in view of what Bacon considered the ideal method of laying it out. Is it possible that he, steeped as he was in classical lore, was subconsciously influenced by his reading of Homer and others, and by the early descriptions of an *orchatos* or *kepos*? In his famous essay *Of Gardens*, he wrote :—

> For gardens, speaking of those which are indeed prince-like, the contents ought not well to be under thirty acres of ground, and to be divided into three parts: a green in the entrance; a heath or desert in the goingforth; and the main garden in the midst; besides alleys on both sides. And I like well that four acres of ground be assigned to the green, six to the heath, four and four to either side, and twelve to the main garden.

It will be observed that in the earliest descriptions of gardens no allusion is made to flowers. It is so in the account of the Garden of Eden. Blossoms were not then grown separately and for their own sake. The garlands of the ancients to which so frequent reference is made in the classics, were first made of leaves such as the Ivy, Myrtle or Bay, and it was only in the later ages that flowers were employed.

The purpose of the garden was primarily to afford fruits and vegetables, but the trees were various, and comprised alike those that were pleasing to the eye and nostrils, and those which were valued for their fruit. While other terms for garden and orchard were used by the early Greeks, these were the most usual, and *kepos* in particular has left its mark on later Greek. Even to-day we find many derivatives from this word in use. In modern Greek the garden is called *kepari*, from which we also get *keparaki*, the *giardinetto* or little garden; *kepouros* the gardener and several other words. Another interesting Greek word is *prasia* which teaches us that in early times vegetables were grown in beds, rows, and carefully ordered plots.

It has been remarked that while the Egyptians were practically limited to the alluvial banks of the Nile for the exercise of garden-craft, the Greek gardeners had the advantage of a wonderfully varied land for the display of their artistic tastes. They could select different aspects, soils and situations, and as a result could grow a much greater variety of herbs and trees. In the Homeric Age much had already been done to utilise these great advantages. The gardens loved of Laertes, Calypso and Alcinous were under the protection of such deities as Aphrodite and Dionysos. Later Aristotle and the philosophers paced the sacred or classical groves. Theophrastus adorned them with a museum and Lycurgus formed alluring plantations, and all this before the Persian Paradise had been described by travellers and made the Greek eager to extend his art of plant culture to its furthest bounds.

So far as we are able to judge from the extant remains of early literature, the Greeks were among the first to descant on the beauties of Nature, and write poems or dissertations calculated to foster a love of the garden and its culture. One has only to turn to such writers as Homer and Aristotle, Theophrastus, Herodotus or Xenophon, to name no others, to see how entirely the Grecian spirit was steeped in Nature-lore, while a study of Greek mythology fills one with wonder at their imagination, and the genius they displayed for the poetic interpretation of natural phenomena. I had almost overlooked Hesiod, who, if he did not himself write the rhapsody on Winter in his *Works and Days* incorporated it from some earlier rhapsodist, since the best critics declare that it bears all the evidence of great antiquity. Paeans to Spring were also sung at Delphi with the intent, no doubt, of demonstrating delight at the termination of the discomforts of winter, and the joy which the return of spring inspires.

From Macaulay, who was strong in the classics, we learn that in the golden days of ancient Rome one might often hear wide-travelled minstrels tell "with admiration of the Colossus of Rhodes, and of the structures and gardens with which the Macedonian kings of Syria had embellished their residence on the banks of the Orontes," an indication that Greek royalty was familiar with the luxury of the pleasure ground. Thus we learn from the poet Theocritus how the Cypress was cultivated to adorn the gardens of the wealthy. :—

> As towers the Cypress mid the garden's bloom,
> As in the chariot proud Thessalian steed,
> Thus graceful rose-complexioned Helen moves.

The word translated "garden" is *kapos*, which is the Doric form of *kepos*. It is sometimes translated "lawn," as in the following alternative version of the Idyl.

> As o'er the lawn a Cypress, or a steed
> In graceful trappings, of Thessalian breed—
> So, chief of beauties, Lacedaemon's pride,
> The rosy-fingered Helen all outvied.

It is said that the luxury of having pleasure gardens attached to dwellings originated with the philosopher Epicurus, who first gave the idea to the Athenians about two-and-a-half centuries before Christ. Long before this, however, flowers had been grown by the Greeks as well as vegetables and fruits, since they used them freely in many religious rites and other ceremonies. The Greeks worshipped Flora under the name of Chloris, and I shall have occasion later to allude to this branch of our subject again. In their sports the old-time Greeks were lavish of their flowers and garlands, but more than this they crowned the dead with them, and used them in their funeral ceremonies.

Those who would pursue the history of the early Greek garden further may be glad of one or two references for their guidance. *Gartenkunst*, by M. L. Gothein, recently reviewed in this journal, contains a long and interesting chapter from which nothing has been drawn in the present survey. In *Manners and Customs of Ancient Greece*, by Mr. J. A. St. John, an admirable picture of Greek horticulture and floriculture will be found, which has also been left untouched in writing the foregoing. Other volumes will be noticed in later papers, and for the rest these notes are chiefly drawn from original reading and research. Much may be learned from such renowned writers as Theophrastus and Dioscorides; Homer, Anacreon, Aristophanes and other poets and dramatists must be consulted, while original authorities such as Hesiod and Xenophon are of the first importance, especially in relation to agricultural pursuits, which lie at the very roots of horticulture. *Hilderic Friend.*

POLYANTHUSES OF A CENTURY AGO.

WHEN perusing Vol. II (1833) of *The Horticultural Register*, recently, my interest was held by an article entitled "More Observations on the Culture of the Polyanthus (Primula vulgaris."

The author was a Mr. John Revell, Pitsmoor, near Sheffield, and I believe I am right in stating that this gentleman was also a well-known authority on the Auricula. In this article and in most others by the old-time florists, two things early rivet one's attention, *i.e.*, the meticulous care bestowed on the culture of the old florists' flowers and the great discrepancy existing between the cultural methods of nearly one hundred years ago and those of to-day.

Thus, in the article under notice—"From the end of November until April, keep the plants warm, by placing them in a common frame or brick pit, which should be sunk, or built lower than the surface of the ground, so that the plants in pots, when in full bloom, should be no higher than the level of the surrounding ground. This frame or pit should be covered with wooden shutters instead of glass to keep out the frost and bad weather." The chief points of interest in the above passage are the use of wood instead of glass, and the recom mendation to keep the pots containing the plants below the ground level.

Again: "Let the plants have the benefit of the gentle rains, which fall in January and February, whilst forming their flower buds. As soon as these are ready to expand, water them with a little liquid manure, drainings from the dunghill, three times a week, and shade the buds with small boards placed on sticks, to keep off the dews or rains while they are exposed in the day time. And to render the colours brilliant and clear, give them one hour's sunshine in a morning." Here we have evidence of the extreme care and exactitude for which the old-time florist was famous and to which he undoubtedly owed his great success; some of the advice is strange, and almost strikes an incongruous note, but we know that the growers of that period produced perfect specimens of their favourite plants, as witness some of the Auriculas still occasionally met with, which were raised many years ago.

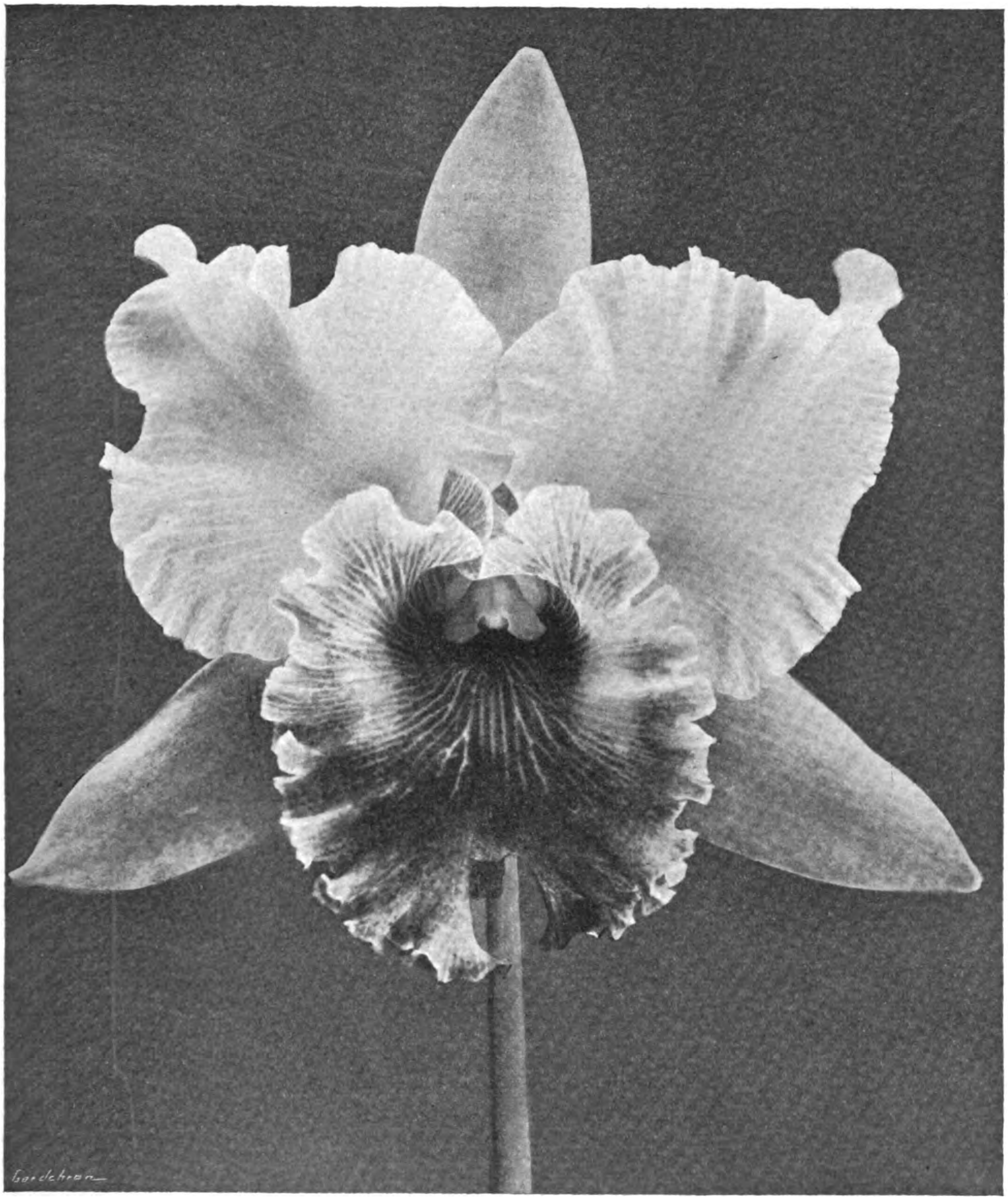

FIG. 180.—BRASSO-LAELIO-CATTLEYA MARGERY.

R.H.S. First-Class Certificate, Nov. 2. Flowers yellow, orange-tinted, and carmine. Shown by Baron Bruno Schröder, Dell Park, Egham. (see p. 377).

Referring to the operation of repotting, the author states: "A single heart being planted in each pot, cut off all the large leaves, leaving only the small leaves of the heart entire; plant them in a light sandy soil, mixed with one-third of new horse-dung. Water them gently with soft water every evening, and never suffer the soil to become too dry and parched." One is struck with the advice "Water them gently with soft water every evering"; it seems to portray the very breath of old-time and also successful plant-growing. Under a south wall is recommended as the summer quarters for the plants "to ripen their seed."

Again referring to the "shutters," we read: "Prop up the shutters, as seen in the engraving (there is an accompanying illustration depicting a brick pit exactly similar to one of modern construction, except that the wooden shutters, I was nearly writing "lights," displace the familiar glass), when air is wanted, or slide them quite off when you wish to give them the benefit of a gentle shower."

The importance of shading the blooms is once again stressed: "for if the sun be allowed to shine upon them, the dark velvet of the flower becomes red, and the fine orange of the eye and edge becomes buff-coloured." An instrument made of ivory is depicted, and its use is to render the flowers completely flat and even; "If the flower be cupped or hardly expanded, press the flattener on the pip, and it will become quite even; and if the bloom turn back, as is the case with the Defiance, and many others, take the flattener and place it under the pip, betwixt the calyx and the corolla, drawing it in through the part taken out of the eye of the flattener." To further improve the flower, the use of the camel hair pencil is extolled. The writer further observes that the Polyanthus thrives excellently in or near large cities, as witness the fine plants grown in Sheffield; it would appear that sometimes, during June and July, plants would suddenly collapse and die without any apparent cause, and that some authorities attributed this mortailty to impure air, a theory with which the writer was in disagreement. He rather leans to the opinion that neglect during May is the cause.—"At that period just mentioned, they generally throw out fresh fibres from amongst their leaves, and thus indicate a want of more support than the old roots are capable of furnishing. It is in fact, an effort of nature to obtain that support. When this is observed, loosen the earth in the pots, and add some new soil, sufficient to cover the new-made roots; for if this be neglected the plants often become languid and sickly and not infrequently die."

A selection of the finest varieties is appended, and also the number of prizes credited to each sort during the spring of 1833; I give this list, and perhaps some readers may have recollections of these representatives of a class of flowers now, alas, extremely rare. Some years ago, I had acquaintance with a small collection of "gold-laced" named Polyanthuses and thought them very beautiful; there is still room in gardens for some of the old-fashioned florists' flowers, and a mild revival would, I feel sure, be welcomed by many.

The leading varieties of 1833 were: Pearson's Alexander, Cox's Prince Regent, Buck's George IV, Collier's Princess Royal, Clegg's Lord Crewe, Nicholson's Bang Europe, Eckersley's Jolly Dragoon, Turner's Princess, Sir Sydney Smith, Crounshaw's Invincible, Fletcher's Defiance, Waterhouse's George IV, Lord John Russell, Beauty of Coron, Biddle's Elizabeth, Clegg's Commander, Revell's Buckingham, Rock's Mary Ann, Chilwell Hero, Revell's Othello, Buck's Huntsman, and Burn's Formosa. To prefix the varietal name with that of the raiser or exhibitor appears to have been usual when William IV was king, and the practice continued, I believe, for some years; it is, at any rate, a quaint practice, and perhaps not ill-advised where florists' flowers are concerned. *Ralph E. Arnold.*

THE ECONOMICAL UPKEEP AND REPAIR OF MOTORS AND MACHINERY.

Gardening, whether it be for pleasure or profit, is, probably, the occupation or industry which is least dependent upon machinery, although, during the last few years, the all-conquering mechanical device has invaded the horticultural as well as the agricultural domains. The motor-mower is frequently heard on lawns, the power pump is audible in garden solitudes, and even in hothouses there are evidences of engineering ingenuity and skill brought to bear upon the many problems of earth productivity.

But by far the most common mechanical device which has been pressed into the service of the gardener is the motor car or van. In market gardening, especially, the latter has become practically indispensable to the rapid distribution and marketing of produce which is peculiarly perishable.

The extended use of mechanical aids in all industries, however, raises an exceedingly important point, and it is, moreover, one with which the gardener—necessarily unfamiliar with engineering problems and their solution—is not usually capable of dealing, in a manner which ensures consistent high-efficiency at minimum cost, and with least loss of time.

This difficulty, of course, centres about the upkeep and repair of units and devices of all descriptions which for any reason become unserviceable or go out of action. To leave the matter to chance or to employ an unscientific method means, in many cases, heavy expenditure and a needless and sometimes serious waste of time.

How important it is to get a van or lorry back on the road again with the least possible delay is graphically illustrated in the following case, which occurred in a southern grower's garden at a critical juncture in the height of the Strawberry season. The grower had concluded an important and exceedingly advantageous deal with a well-known firm of fruit preservers, who had been caught short on a rapidly rising market. The condition was delivery of the complete order within forty-eight hours.

Normally, with a two-ton wagon standing by, there was no difficulty here; unfortunately, the consignment had not been half-an-hour on the road before the front axle fractured, as the result of the wheels becoming locked in a deep rut. The fore part of the van crashed, doing extensive damage to both engine and chassis members. The grower, on being informed, wired to the nearest garage for a van to complete delivery, which, after delay and expense, he was able to effect within the stipulated time. Then came the question of repair. According to the agents consulted the outlay would be heavy, but what was almost worse, the time taken to get the unit back into service would be at least ten days—and ten days is a long time to a Strawberry grower with a waiting market and unreliable local transport.

Ultimately, at the suggestion of a motoring friend, he submitted his trouble to a firm of welding specialists. By special arrangement the work was begun on the following morning, and completed three days later at a cost which was round about twenty-five per cent. of that mentioned by the agents.

Similar cases are by no means exceptional—not only as regards motors of all types, but machinery of all descriptions, used for all purposes.

The value of scientific welding lies in the fact that (*a*) it can be employed in practically all cases of mechanical breakdown to restore the defective unit to 100% efficiency, or, used where necessary, to strengthen any part as required. The cause of the failure is almost immaterial, whether it is due to fracture, wear and tear, damage or accidental injury, its complete rehabilitation is simply a question of skill and the right process. (*b*) It can be used to effect a saving in the cost of reconstruction of between 50% and 75% on the average; while in certain cases restoration can be carried out at a charge which is a mere fraction of the price quoted in the ordinary repair agent's estimate.

Now, without attempting to deal with any of the half-dozen distinct fusive processes which are used by the *scientific* welder, or to enter into a technical discussion of the problems which attend their use, it may be well to point out to all machinery owners or users that the adoption of a sound process does not necessarily involve economy. Behind every process is the man, and in welding, as perhaps in nothing else, the skill and experience of the operator is the determining factor.

Take, for example, any of the high-grade steels and ferro-composites containing varying percentages and combinations of molybdenum, titanium, zirconium, cobalt, manganese, chromium, tungsten, vanadium, silicon, nickel, etc., which are now so extensively used in the construction of all machinery; there are not ten craftsmen out of a hundred who are qualified or capable of dealing with these materials so as to ensure reconstructions embodying 100% efficiency.

Actually, statistics prove that in something like 97% of cases in which these metals have been dealt with by inexperienced workmen, or have been subjected to temperatures ranging between 1,000° and 6,000° Fahr., without proper safeguards, extensive and irreparable damage has been done.

Tests which include the use of "X" rays, radio-metallographs, and photo-micrographs almost invariably reveal one or more of the following defects in work handled by untrained operators; hard beads, cold shuts, distortion, oxidation, internal stresses, injuries to crystalline structure of parent metal, loss of physical qualities, warping, imperfect alignment, microscopic cracks and fissures, expansion and contraction flaws, damage arising from too high or too low temperatures, wrong cooling, unsuitable fusive process or agent, improper thermal preparation, etc.

Each of which has, at one time or another, been the direct cause of mechanical failures and serious accidents.

From the foregoing it will be seen that "scientific" welding, and welding, are far from being identical. The former represents the last word in economical mechanical maintenance and repair, the latter, at all times, is of doubtful value, and frequently results in the destruction of the unit treated.

Sound work—that is to say, work having a positive cash value to the machinery owner—demands: (*a*) the services of an expert metallurgist who has specialised in the high temperature treatment of modern industrial metals; (*b*) the employment of trained and qualified operators; and (*c*) the use, by selection, according to the nature or character or the repair and the precise metal to be dealt with, of each or any of the half-dozen processes which now comprise the welder's armoury. If this is done, and only if this is done, welding may be regarded as the actual solution of the problem referred to above.

The following incomplete list of major or minor reconstructions is put forward as a guide—and nothing more—to the class of repair which is now considered as strictly routine by the welding specialist: all metal parts of all types of motor transport, including fractured, worn, damaged or scored cylinders, water-jackets, combustion heads, crank cases, crank-shafts, gear-boxes, gears, pistons, con-rods, transmission shafts, chassis frames and members, radiators, mudguards, light metal sections, bearings, housings, journals, seatings, brackets, angles, lamps, tools, accessories and garage equipment; all metal parts of pumps, heating apparatus, furnaces, boilers, coppers, tanks, cisterns, troughs and irrigating plant; all agricultural implements and cultivators, ventilating plant, filters, jam-boiling and fruit-preserving plant, bottle washers and cappers; weighing machines, mechanical conveyors, transporters and runways, portable or stationary power units (electrically, gas, oil, petrol, steam, wind or water driven); refuse destructors, light or heat generating plant; baling machines and presses, etc.

Not long since, a big Californian grower, who relies exclusively upon welding to keep his plant at the "full-service level," summed up the value of this unique process, in his own quaint and terse manner: "Say, I figure that this metal cure of yours is a mighty fine proposition, but I guess that it draws all blanks unless the fellow guiding the machine knows no more and no less than what he is up to." Which, in our more prosaic language means: welding is an amazing process, of unlimited possibilities in the sphere of mechanical maintenance and repair, but that its efficacy depends wholly and solely upon the knowledge and skill of the craftsman applying it.

That, actually, is the position—and it is a position which assuredly cannot fail to interest all machinery-users who, in these difficult days, are eager to reduce upkeep charges. *C. W. Brett, Barimar, Ltd., 14-18, Lamb's Conduit Street, W.C.*

NOTICES OF BOOKS.

Research and the Land.

THIS book* covers the whole of the agricultural and horticultural research carried out in the United Kingdom during the past four or five years Something like £400,000 is now being spent annually by the State on this work. The field surveyed is sufficiently indicated by the table of contents. Starting with the soil, the book describes investigations into its physics, chemistry and biology; the question of plant-breeding is then dealt with, and the means by which improved varieties are introduced to commerce; the living plant is then taken up, and the investigation of its physiology explained; horticulture receives separate attention, and a fairly complete summary is given of the Long Ashton, East Malling and Cheshunt investigations, and the work on fruit preservation and storage at Chipping Campden and Cambridge; finally, on the subject of plants, the numerous diseases are dealt with in detail, and a further chapter is devoted to general investigations which affect the whole field of plant disease treatment.

Turning to the animal kingdom, the book first deals with the feeding of stock, and outlines fundamental investigations on such subjects as the mineral constituents of feeding stuffs and the influence of ultra-violet rays. The scientific investigation of particular feeding stuffs, such as pasture grass, Wheat offals, silage, etc., is next dealt with. This is followed by an account of valuable work on animal reproduction and breeding. The practical research schemes into pigs and poultry are then described. Dairying research, including the question of clean milk and the investigation of manufacturing difficulties in connection with milk products, occupies the next two chapters. A further chapter outlines the work on animal diseases which is being carried out at many centres. Agricultural engineering, including crop-drying work and the investigation of the new process of sugar extraction from Sugar Beet, receives attention and, finally, a survey is presented of research into agricultural economics, which has come so largely into the limelight since the war.

The account of horticultural investigation occupies a very substantial part of the book. For convenience of reference, the following notes may be found useful.—*Breeding*: Potato breeding work is dealt with on pages 64-65. Some of the technical difficulties are explained. Chapter XIII, pages 86-87, gives an account of the Wart disease trials and yield and maturity trials in England, Scotland and Northern Ireland. The breeding of fruit and Hops is discussed on pages 80-83. The production of new Hop varieties of high resin content at Wye is detailed on page 83.

Physiology.—In Chapter XIV, on the growth of a plant, there is much of interest to the horticulturist, especially to the glasshouse grower. The study of the best temperature for Cucumbers, for example, described on page 94, and illustrated in Fig. 9, is interesting; also the South Kensington work on carbon-dioxide (pages 92-93).

Fruit Growing.—A full account of the research at Long Ashton and East Malling is given in Chapters XV and XVI. Commercially, one of the most important lines of work is, of course, the root-stock classification research and the sorting out of bush fruits. The Malling pruning experiments, referred to on pages 117-120, are also invaluable.

Glasshouse Crops.—The Waltham Cross research is dealt with in its entirety on pages 121-127.

Strawberries.—The account on pages 127-130 is interesting, but the work has only been going on for a year or two, and commercial results cannot yet be expected.

Bulbs.—The work of the Director of the Experimental Station in the Scilly Isles, described on pages 130-132, is worthy of mention. He has saved the flower trade in the Islands from an extremely critical position, and restored confidence to the Scillonian engaged in the flower industry.

Willows.—The Long Ashton research (see pages 132-134) is commercially valuable. Among recent useful work may be mentioned the manuring trials and the finding of a hopeful spray against Willow beetle. It will also be seen, on page 133, that breeding work is contemplated.

Fruit and Vegetable Preservation.—The whole of Chapter XVIII should be read with interest by fruit growers and gardeners. The footnote reference on page 139 to the Liverpool work on storage hints at a discovery which may be of great value commercially. The work at Chipping Campden (see pages 141-144) is all valuable and the cold process of jam-making may be worth special mention.

Plant Diseases.—Three chapters (XIX, XX and XXI) are devoted to a very extensive survey of the whole field of plant disease research. It is invidious to point to particular sections of this work, but perhaps special credit is due to the insecticide work at Rothamsted (pages 150-152); the Cambridge spraying experiments (pages 161-162); Mr. Brook's work on Silver Leaf (pages 170-173); the report on virus diseases of Potatos (pages 181-185); and the frit-fly research (pages 191-192). But perhaps this singling out of investigations is unfair, for all the three chapters were written after careful selection, and the work throughout is extremely valuable.

The book extends to 388 pages, and includes twenty-nine illustrations chosen to present a fair picture of the main phases of scientific investigation. There are two appendices, one containing a list of research and advisory centres through the United Kingdom, the other being a complete bibliography of technical publications on agricultural and horticultural research published within the past four years. The book is fully indexed and is an admirable and extremely useful publication.

NURSERY NOTES.

MESSRS. ALEX. DICKSON AND SONS.

THE nurseries of Messrs. Alex. Dickson and Sons, at Newtownards, Co. Down, Ireland, are beautifully situated, not far from the head of Loch Strangford, an inlet so deep that it almost converts the Ards peninsular into an island. There are hills round about, and of these Scrabo is the highest, for one has to travel several miles south on the mainland ere the Mountains of Mourne are reached. The Newtownards Nurseries are extensive, and although not all in one piece, the sections are quite near each other, and all entered from the one main road.

The fruit trees, shrubs, Dahlias, Phloxes, Delphiniums, Gladioli, Pyrethrums, all represented by fine stocks of the best varieties, as well as hardy flowers generally, are grown in the nursery entered at the head of the main street at Newtownards. This is part of the original site on which four generations of the family have conducted business as nurserymen. Here, also, are the glasshouses, and several of these are of large size and up-to-date construction built for the purpose of growing flowers for the supply of the firm's florists' business in Belfast. Perpetual-flowering Carnations are splendidly grown and in enormous quantities, whilst in the early part of the year Sweet Peas are cultivated under glass with equal success. Chrysanthemums form another big item in flower production. Planting-vines are grown in first-rate style, as also are choice climbing plants of many kinds.

As becomes a firm so noted for its Roses, several houses are devoted to the propagation of the newer varieties as well as the production of pot plants. One big house is planted with the newer Roses and is a fine sight in early summer.

One large block of land is devoted to the seedling Roses in what may be termed the home nursery, and these always form one of the great attractions to visitors, and especially to Rose enthusiasts who desire to keep abreast of the times. The selected seedlings, however, offer a better opportunity for judgment, and there are sufficient of each to admit of appraisement and the formulation of opinion concerning them.

Progress is always evident in these selections, for Messrs. Dickson have long passed that period when a raiser considers every goose is a swan. Beauty of colour alone is not regarded as the acme of perfection, for unless a variety has good constitution and habit it never gets beyond the selection stage, although it may remain there for several years, provided it has some desirable attribute that may warrant its use as a parent. A few of the seedlings that arrested our attention in the autumn included a Tea-scented, lemon-yellow variety of splendid habit; a clear red variety tinged with orange; a gorgeous crimson-scarlet sort with a lovely glow and Tea-scented—a variety one wanted immediately, but that was not possible. A black-stemmed variety of the Madame Ravary type, but of deeper colour, dark foliage and a grand grower, should eventually find a place in most gardens, while lovers of dark-hued flowers should look out for a deep, dusky crimson variety we considered ought to be named Old Port. A solid carmine-rose seedling, three shades deeper than Lady Mary Elizabeth, indeed almost scarlet, raised great hopes, and near by was a velvety scarlet seedling with long buds and blooms of fine shape. A light yellow Rose, very free, with medium-sized blooms and of first-rate bedding habit (there were seventeen flowers on one plant) will probably appear in due course under the name of Joan Curtis, while a dainty, coppery-fawn variety suggested Dresden China as a good title. There is also a solid rose-pink seedling which carries massive blooms of exhibition style and size and has, handsome foliage. It would be an easy and interesting matter to enlarge upon the Newtownards seedlings, but when a variety has not yet reached the dignity of a name it seems a waste of effort to describe it under its number in the firm's record book. Nevertheless, the foregoing few notes on selected seedlings will serve to show Messrs. Alex. Dickson and Sons are not resting upon their laurels.

Farther along the road the firm has a fine stretch of land, some used for pasture, some for Corn crops and some for Roses. Soil and position are alike first-rate for the production of sturdy plants, for when the wind comes from the south up the Loch one can taste the sea breezes; when the wind comes from the north it has a clear run, but in the west the rising ground acts as a break for the gales that come from that quarter. The Newtownards Roses do not live in one of those semi-tropical valleys for which some parts of Ireland are noted; they have to withstand all weathers. Some evidence of the extent of the Newtownards Rose-growing business may be gathered from the mere statement of fact that this year no fewer than 300,000 were budded in the open fields.

The Newtownards Roses are so popular and held in such high repute and so frequently exhibited that it is hardly necessary to name them. However, here in the wide open ground we saw all the following in grand condition in early autumn. Shot Silk, a peerless beauty, long lasting, and one of the finest of garden Roses yet introduced: Fred Harrison, crimson-scarlet, a great Rose; Lord Allenby, deep crimson, velvety, with long shapely buds; Scarlet Glory, a fine garden Rose; Margaret Dickson Hamill, a splendid yellow sort; Lady Maureen Stuart, dark crimson-cerise with blooms that will withstand brilliant sunshine; Lady Inchiquin, orange-cerise, a beauty that has formed the centre of attraction at many large exhibitions this year; Betty Uprichard, salmon-pink, flushed with orange, sweetly scented, and possessing well nigh every attribute a rosarian demands; Dame Edith Helen, an ideal Rose, rich pink in colour, delightfully fragrant and a grand grower; Lady Helen Maglona, another variety of the present season, deep, rich crimson with exquisite fragrance, and Lady Worthington Evans, a beautiful Rose of glowing, deep crimson colour. A few other Roses that attracted special attention growing among the large number of their own and other varieties

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* *Research and the Land.* By V. E. Wilkins, B.Sc., Assistant Principal, Ministry of Agriculture and Fisheries. H.M. Stationery Office, Adastral House, Kingsway, London, W.C.2. Price 2s. 6d. in paper covers; 3s. 6d. in cloth.

seen on the occasion of our visit can be referred to only by name: Hawlmark Crimson and Hawlmark Scarlet; George Dickson, Scarlet Glory (grand colour); Prince Charming, Golden Emblem, Mrs. H. Morse, W. C. Gaunt, Queen Mary, Mrs. Aaron Ward, Maud Cuming, the American Mrs. Calvin Coolidge, Mabel Morse, John Russell, Killarney and John C. M. Mensing, the Dutch sport from Ophelia.

Polyantha Roses fill a large space and the outstanding variety on the occasion of our visit was the yellow Gwyneth.

A visit to Newtownards in August and early September should be an item in the itinerary of every enthusiastic rosarian; an Irish welcome is always waiting, while the nurseries of Messrs. Alex. Dickson and Sons will always repay inspection.

FRUIT GARDEN.

APPLES IN 1926.

In this year of scanty Apple crops it may be of interest to note some of those varieties that have borne moderately well in this district on the borders of Middlesex and Bucks.

The best crop—quite a good one—was on an old orchard tree of Lord Suffield, and although this particular tree fruits only every other year as a rule, in 1925 it carried a good average crop, and again this year. A standard tree of Warner's King had a fair crop. The individual fruits were not quite so large as usual, however, and they were inclined to drop rather early.

Gascoyne's Scarlet did moderately well, but as the fruits began to show colour they suffered considerably from the depredations of birds and wasps. This necessitated rather earlier picking than was desirable, which probably accounts, in a great measure, for the fruits being somewhat lacking in flavour.

Ribston Pippin promised well at one time and bore a fairly good crop, but as the season advanced many of the best looking fruits dropped.

Lane's Prince Albert, both bush and standard trees, carried moderate crops. The fruits were somewhat small, however. Young bushes of Cox's Orange Pippin fruited somewhat unexpectedly, but the quality was poor. This was also the case with Ellison's Orange.

Allington Pippin fruited moderately well in all forms, but birds were responsible for considerable damage.

With regard to Blenheim Pippin, the total result on several well-grown standards was one fruit! For many years past these same trees have fruited regularly every year. *Howard H. Crane, Eastcote, Middlesex.*

MARKET FRUIT GARDEN.

Rain fell on fourteen days during October in my district, but the total amount, 3.05 inches, is rather under the average for the month. During the first week the ground worked as well as it has done at any time during the season, and very good progress was made in the cleaning and manuring of bush fruits and ploughing one furrow up to each side of the rows to cover the manure and replace the soil hoed away with the weeds. Rain interrupted the work at this stage, and some remains to be finished by horse cultivating between the rows and finally drawing a water furrow with a ridging plough midway down each alley for drainage purposes during the winter. The cultivation almost fills up the furrows drawn close to the rows, which is the chief reason for doing it. I like this plan better than the method of ploughing the whole width of the alleys between the rows, as it leaves the land more level and does not disturb so many roots. On rain interrupting this work, attention was turned to the grubbing of trees where they are too close together, and to the pruning of Plums and Black Currants, which had shed most of their leaves.

Thinning out Plantations.

The trees in my older plantations are, in many cases, too close together, and I have planned to do a good deal of grubbing during the winter to correct this. It should have been done before; but I was never able to see how it could be accomplished without a very serious sacrifice. The trees, mainly Apples on the free stock, were planted only twelve feet apart, which is, of course, quite hopeless. As they were "angled" (trees in one row opposite spaces in the next), it is impossible to thin out by grubbing alternate trees, as any one can see who plans it out on paper. The only method seemed to be to take out alternate rows and every other tree in the remaining rows. This would mean losing three-quarters of the trees, a very serious matter. For years I have been under the impression that this was the only possible plan. At last it occurred to me that one could give every tree a great deal more light and air at a sacrifice of only one-third of their number—that is, by grubbing one tree in three in every row. The result may not be ideal, but it is certainly a great improvement on the original overcrowded plantation, and apparently makes the best of a bad job. If, at some future time, the trees require still more room, it will be possible to take out half of them and leave the remainder symmetrically placed at eighteen feet by twenty-four feet. As other growers are probably faced with a similar problem, it may be worth while to illustrate the method I am adopting.

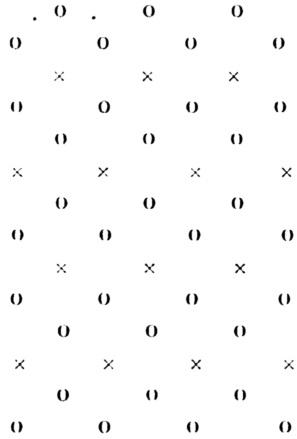


Fig. 1.—Trees angled twelve feet apart, 302 per acre.

Those marked × to come out, leaving 200 per acre.

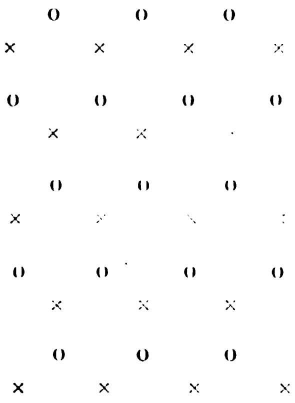


Fig. 2.—Result of first thinning.

Trees marked × to come out at second thinning, if needed, leaving 100 per acre.

To facilitate the work of grubbing, I have bought a small Australian monkey jack, and a very good investment it is proving. After a very little digging and the cutting of a few of the largest roots, big trees may be pushed over with the jack. They are, in fact, torn out of the ground with many of their roots still attached. This makes quick work of it, as it does away with the slow and very heavy business of pulling the tree this way and that in order to expose any roots that penetrate straight down into the ground. The branches are, of course, cut off first. The job is quite different from transplanting or clearing a piece of land for replanting, in which case it is necessary to begin digging some distance from each tree and to get it out with as many roots as possible. In the present instance, I do not want to disturb the ground more than is necessary for fear of injuring the roots of the trees that are to remain.

Contrast in Apple Crops.

One of the things that makes it difficult for home growers to compete effectually against imported Apples is the wide fluctuations in our crops due to the climate of this country. That these fluctuations are due entirely to weather influence over which we have no control is proved by the extremely poor crop gathered this season over very wide areas. Take Kent and the rest of the south-eastern counties, for instance. Here are hundreds of growers adopting all manner of methods of pruning, manuring, etc., and yet all alike have had the lightest possible crops. Clearly we are at the mercy of the weather, no matter how skilful and thorough we may be. As an instance of contrasting crops, I give below the yields of some of the varieties on my place in the last two seasons. The crop of 1925 was good but not exceptional; that of 1926 was the lightest in my experience. The yields are given in half-bushels.

	1925	1926
Allington Pippin	835	5
Beauty of Bath	1,243	49
Bramley's Seedling ...	1,246	397
Cox's Orange Pippin ...	940	—
Lane's Prince Albert ...	1,250	86
Newton Wonder	72	91
Charles Ross	232	54
Early Victoria	105	90
Worcester Pearmain ...	675	362

The total crop of all varieties this year was 1,902 half-bushels, as compared with 9,326 in 1925! The only variety besides Newton Wonder which gave a heavier yield this season than last was Early Julyan, a very poor Apple. My entire crop of Cox's Orange Pippin this year was 12 lb.

Mixed Plantations.

One of the bright spots in this bad season is the fine growth made by bush fruits and young trees. I have never had Black Currants looking so well, young wood being plentiful and much of it thrown up from the base of the bushes. In some cases young Apples have made almost too much growth. In one of my plantations they have produced shoots four feet to five feet long, which is more than I like to see. This is one of the disadvantages of a mixed plantation of Apples and Black Currants. One is obliged to manure the Currants generously every year; and the Apples get more than is good for them, the result being excessive growth and delay in coming into bearing. There are other objections to such a mixture. The Currants sometimes interfere with the spraying of the Apples. It is impossible to give a late application of Bordeaux mixture or lime-sulphur for scab because it would mark the Currants; and arsenate of lead cannot be used late in the season for fear of poisoning them. Yet it is difficult to find a more profitable method of planting. The bush fruits come into bearing in their third year, and, at any rate, pay expenses during the time in which the trees are growing into bearing. The only alternative that appeals to me is the use of Apples on East Malling Type IX as temporary "fillers" amongst the permanent trees. On this very dwarfing stock, these could be planted as closely as nine feet apart; and they would quickly come into bearing. So soon as the permanent trees needed all the room the "fillers" would have to be grubbed, of course. A plantation made in this way would offer no hindrance to spraying, manuring, or other operations, as all the trees would need the same treatment at the same time. The objections would be the high initial cost and the probability of crop failures from both sets of trees in bad seasons. With a mixed plantation it often happens that a crop of Currants gives some compensation for a light crop of Apples, and *vice versa*. Mixtures of different classes of tree fruits, such as Apples and Plums, are, of course, very objectionable, because they require spraying at different times. *Market Grower.*

VEGETABLE GARDEN.

WINTER SALADS.

Endive is, perhaps, the most important salad plant in winter, and if sowings of this vegetable were made during August and September, the earliest plants will now be ready for blanching, and this may be accomplished in several ways.

If the plants have been well-grown they will have produced an abundance of strong, healthy foliage, and this should be gathered up and tied around with strong matting, taking care that the plants are perfectly dry when this is done. Another method of blanching is to place a six-inch pot over each plant and cover the drainage hole with a piece of slate to exclude the light. Although Endive is fairly hardy, much frost and wet will rot it, therefore, plants intended for later batches should be lifted and either planted closely together in frames or placed in large boxes and stood in the Mushroom house or a dry shed from which the light can be excluded. Admit plenty of air to the house or frame, or the plants will damp off. Successional batches may be introduced to warmth as required, but any left outside should be protected. An excellent plan is to plant some of the stock under a south wall, giving the roots a good watering after planting to settle the soil, then the leaves can be tied over the hearts as advised for the earlier batches. Dry Bracken Fern or dry straw thrown over the plants will protect them should sharp frosts occur.

Chicory is an excellent salad plant but requires a longer period of growth than Endive. If sown in April or May on rich, deep ground, fine plants are obtained by October, when they will be ready for lifting.

The roots are long, not unlike a small Parsnip, but it is the top growth which is used for salads. When the plants have made good top growth, which will be in the late autumn, the roots should be lifted carefully, and the foliage trimmed to about four inches from the top of the root. Place as many plants as are required closely together in deep boxes or large pots, using any fairly good soil, and make them firm, leaving the crowns of the plants just above the surface of the soil. Water them in and then place them in a Mushroom house or shed or even under the stage in a greenhouse, and exclude the light from them.

Examine the plants at intervals and remove any leaves that may be damping off. Chicory will submit to a little more forcing than Endive, but the amount of warmth should not be overdone, or the plants will become infested with aphis. The plants will soon push up strong growths, and when about six inches or so in height will be ready for use. The heads should be severed with a sharp knife close to the crown. The old forced roots are of no further use and may be discarded to make room for further batches.

Corn Salad or Lamb's Lettuce is not so well known or grown as the two preceding salads in this country, nevertheless, it is very useful in the spring. Seeds should be sown on a warm border in the autumn, and the young plants thinned to withstand the winter. They will throw up quantities of fresh, young leaves in the spring, which may be picked and used at once. If a few are gathered from each plant, the rows will continue to produce plenty of young, tender leaves. The plants should be well-watered in dry weather.

Lettuces of the smaller, non-hearting varieties, are best for winter cropping. Good Lettuces, especially of the Cabbage varieties, may be produced up to Christmas by sowing in frames in the autumn and thinning the seedlings where they stand, but from Christmas till April when the early-sown plants are ready in frames on hotbeds, the matter is not so easy. Two or three varieties are catalogued as non-hearting these being especially useful for winter supplies. The seeds may be sown in the late autumn and the seedlings pricked out in boxes and grown on in gentle warmth.

Celery and Beet are both much used as winter salads. Seeds of a good strain of Globe Beet should be sown in frames during August, and the plants well thinned and kept watered in dry weather. They will make excellent little roots for use in the salad bowl, and may be taken up and stored in sand if the frames are required for other purposes.

Mustard and Cress should be sown at intervals of ten days or so in shallow boxes of loamy soil, sifted through a fine sieve. Sow the seeds thickly on the surface, press them on to the soil, and water the latter with a fine-rosed can. Do not cover the seeds with soil but place a sheet of glass and another of paper over the boxes to conserve the moisture. Grow these crops in a well-heated house, and examine the boxes for water, as Mustard and Cress resent dryness at any time. It is a simple matter to keep up a supply of these salads, provided fresh soil is used each time and the soil in the boxes is kept moist.

The successful production of ripe Tomatos during the winter calls for special care and attention, and the same applies to Cucumbers. A fairly warm house that can be ventilated adequately according to the weather, good, sweet soil, and every attention as regards tying, stopping, etc., are necessary in the case of Tomatos, while much heat and moisture are essential for Cucumbers. *R. W. Thatcher, Carlton Park Gardens, Market Harborough.*

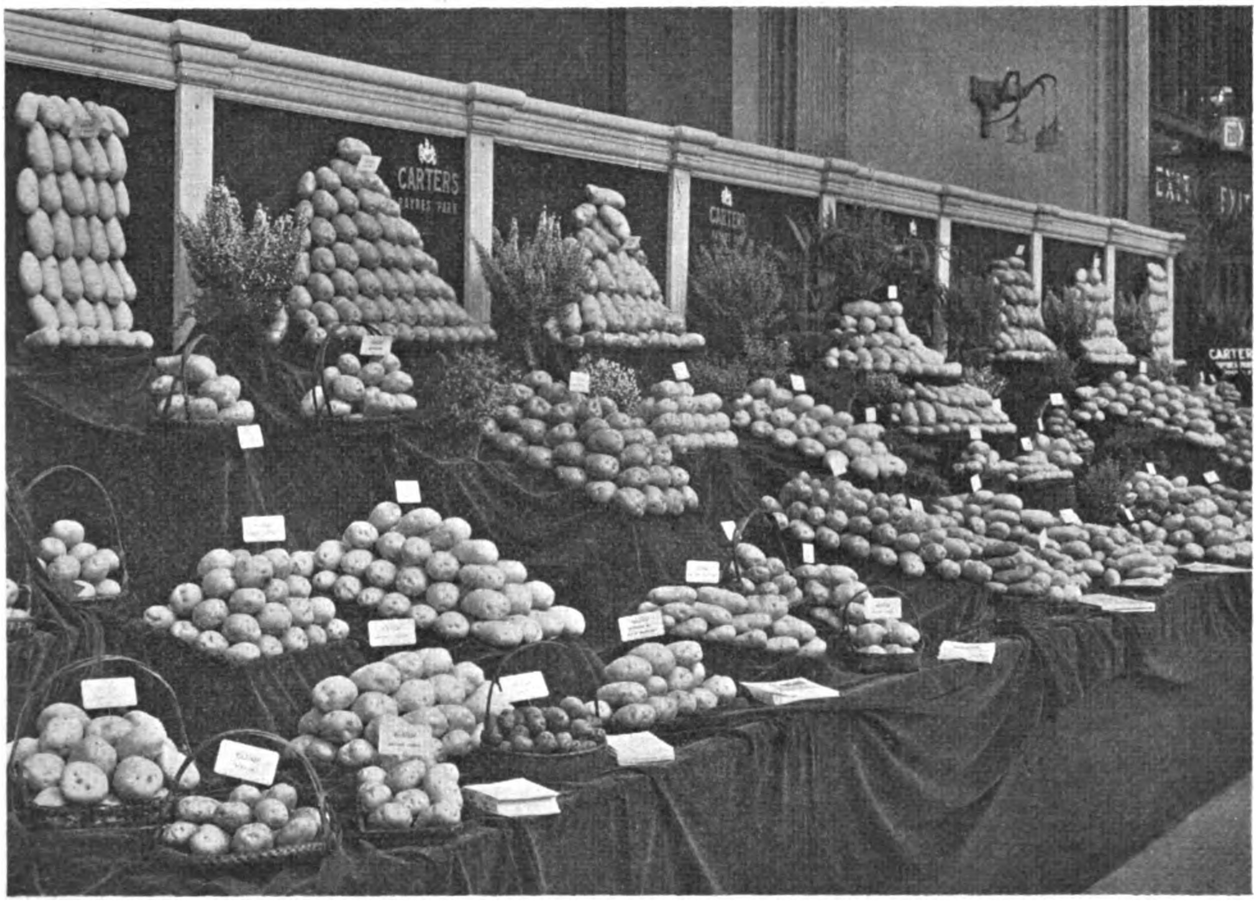


FIG. 181.—MESSRS. J. CARTER AND CO.'S EXHIBIT OF POTATOS AT VINCENT SQUARE ON NOVEMBER 2.

(see p. 378).

TO PREVENT BOLTING IN CABBAGES.

From really reliable sources, I have been informed that to prevent Cabbages from bolting a good plan is to lift the plant slightly with a fork, pierce the stem with a penknife about two inches above the roots, and insert a stick or piece of wood in the cut stem. Then retread the roots firmly so that the piece of stick just disappears below the ground. This effectively prevents bolting and good Cabbages result. The idea is obviously to check growth, rather than stimulate it.

A Sussex farmer who grows Cabbages by the acre, informed me that bolting amongst autumn-sown Cabbages may be prevented by merely raising the plants slightly with a fork so as to allow more air to penetrate to the roots, and to leave them thus until the soil becomes quite dry. Then, while the soil is still dry, retread the plants firmly.

The idea is that fresh fibrous roots are formed while the plants are fairly loose. These new roots enable the plant to absorb more nutriment from the soil.

The hole and stick method was, he assured me, quite a good one for small gardens, but the boring of holes through the Cabbage stems and the insertion of sticks therein was too laborious a method where Cabbages are grown on a large scale. *Captain E. A. Saunders, Compton, Sussex.*

HOME CORRESPONDENCE.

[*The Editors do not hold themselves responsible for the opinions expressed by correspondents.*]

Amaryllis Belladonna.—I am forwarding a photograph of our Amaryllis Belladonna. Unfortunately not suitable for reproduction—Eds.], which have been blooming profusely this autumn. We have two rows, both under walls facing south. I have noticed that following a wet summer this plant does not give the amount of bloom it does when we have a very hot summer. My opinion is that the hotter the summer the better the bulbs flower. We only feed the Amaryllis once, about the end of June, with liquid manure. This photograph was taken a few days previous to 12° of frost, which cut them all down, an occurrence I have not known to happen quite so early in other years. *A. J. G., Surrey.*

Pentstemon gentianoides and Lilium auratum.—I was greatly interested in Mr. Everett's note on the beautiful Pentstemon gentianoides, and should very much like a few in my own garden, but, on looking through various catalogues I cannot find it listed. Could any reader tell me where I may procure a few plants and would it thrive in this part of the West Riding of Yorkshire? I would also ask the many gardeners who take *The Gardeners' Chronicle* if they consider it a very rare thing for one stem of Lilium auratum to develop sixty flowers; I have shown such a specimen to many old gardeners at the Wakefield Paxton Society and none has seen one with so many flowers on before. *G. H. Stead, Castle Lodge, Wakefield.*

Salvia involucrata Bethellii.—I have been greatly interested in reading Sir Herbert Maxwell's reference (p. 308) to Salvia involucrata var. Bethellii. I have grown this Salvia in Ireland, and consider it one of the most charming of autumn-flowering plants for the cold greenhouse. I have several times had doubts expressed as to the correctness of the name. With me, the flowers were pure rose. I should never describe them as "rosy-crimson" (p. 356). The late Mr. T. W. Sanders, in his *Encyclopaedia of Gardening* refers to the colour as "crimson" a description I cannot understand. Another Salvia almost equally charming is the mauve-flowered S. leucantha. The silvery under sides to the foliage, together with the dainty, mauve flowers give a delightful effect. The cuttings strike very easily if put in in gentle heat in spring. A single plant was given to me under the name of S. Grahamii! It was not until the following autumn I discovered the mistake, and it was certainly one I did not regret. S. Pitcheri, the blue Salvia which comes into flower in January and February, is, to my mind, one of the prettiest of that colour. The flowers are nearly sky blue. The plants want pinching out well as they are inclined to grow straggly. *Miriam A. Cottinger.*

——In his interesting notes (p. 308) Sir Herbert Maxwell refers to Salvia Bethellii, and asks for any information concerning this plant. Thirty years ago, S. involucrata and its forms, Bethellii and Deschampsiana, were much cultivated as warm greenhouse subjects. S. involucrata has rosy-purple flowers. S. Bethellii was considered to be a seedling from the former, is of better habit and a rich rose colour, while S. Deschampsiana is also a bright flower. It was with considerable astonishment I saw this plant flourishing outside in the gardens of the late Sir J. Ross, where, I was told, it had withstood many winters. Here, too, was S. rutilans, the Apple-scented Sage, proving equally suitable as a hardy plant for coastal gardens. Salvia Pittieri, (? Pitcheri) has not as yet withstood a winter in these gardens, but so good an autumn plant must be repeatedly tried, until some genial, gravelly spot is found which will drain away the wet which is its chief enemy in winter. *T. W. Bolas, Mount Stewart Gardens, Co. Down.*

Planting Bulbs.—I was surprised to read in his note on p. 325, that Mr. A. T. Harrison advocates planting bulbs before the carpeting plants. This must mean a great loss of time in marking each bulb, as well as the care that would have to be taken in planting, especially where Wallflowers are used as the groundwork, to make sure that the bulbs are not moved. Why not plant the carpeting plants first, then plant the bulbs with a bulb dibber through them, fill the holes with old potting soil and level the surface with hand-planting forks? This would save the trouble of marking the site of every bulb, which must mean a considerable waste of time, especially where large numbers of spring bedding plants are being placed in beds at this season. *E. Semper, Park Superintendent, Gillingham, Kent.*

Ribes speciosum.—I notice in *The Gardeners' Chronicle* of October 9, a reference to the fruiting of the above-named shrub. It may be of interest to mention that this plant fruits here regularly on the east coast of Scotland, so there is nothing remarkable in its fruiting at Culzean on the west coast. *A. B. H., Prestonkirk.*

King Edward Potato and Slugs (see pp. 299 and 336).—My experience with King Edward Potatos may interest readers of *The Gardeners' Chronicle.* I have grown King Edward, Great Scot, Red King and Field Marshal side by side, and noticed that King Edward is most subject to attacks by slugs. This variety has a very thin skin, different to many others. Red King is also a very thin-skinned Potato. As to flavour of Potato, I cannot name one better than Field Marshal, a rough-skinned, round Potato. To me it has a flavour above all others and cooks like a flowery ball. It is a good late keeper and a very heavy cropper, which have proved to me this year above the others growing in the field by the side. I grow roughly one-and-a-half acres, and I am so convinced of its quality that I am doing away with all the other late sorts. I have often wondered why this Potato is not grown more extensively; I never once remember seeing it dealt with in any article in any garden paper. *R. Greenfield, Watts House Gardens, near Taunton, Somerset.*

——I endorse the remarks of Mr. G. C. Johnson with regard to the injury by slugs to King Edward Potatos. During the past five years I have carried out trials with a large number of varieties, and in each year the variety King Edward has suffered more injury from slugs than any other sort. Bishop was the next worst attacked by these pests. *T. G. Bullock, Horticultural Instructor, Leicestershire County Council.*

SOCIETIES.

NATIONAL CHRYSANTHEMUM.

November 4 and 5.—The high standard of past years was fully maintained, and even surpassed in some classes, at the annual show of the National Chrysanthemum Society at the R.H.S. Hall, Westminster, on the above dates. In most of the classes the competition was very good indeed, and during the afternoon of the first day the attendance was so large that close inspection of the exhibits was a matter of difficulty. The arrangements worked with their accustomed smoothness and, in marked contrast to some other shows, the judging was completed well in advance of the opening hour. At the luncheon, in the lecture room, Mr. H. J. Jones, V.M.H., whose enthusiasm for the Chrysanthemum and the Society were so great that he rose from a sick bed to attend, remarked that he had not missed the annual show for thirty-five years. Mr. George Prickett and Mr. Norman Davis, two other old supporters of the Society, were also present, and the Secretary stated that Mr. Charles Beckett, who retired from exhibiting twenty-five years ago, after having gained many successes had "come back" at the present show with conspicuous success. In addition to other prizes, Mr. Beckett won *The Gardeners' Chronicle* Silver-gilt Medal offered for the best exhibit in the amateurs' classes. The experimental class for big blooms, in which the Society provided show boards with tube holes ten inches apart was very interesting. This increased distance premitted the display of the specimen blooms far better than before, but, even so, in the leading exhibits the outer florets of the larger blooms touched. Large number of novelties were submitted to the Floral Committee, and ten received awards.

First Class Certificates.

Aquitania.—A splendid exhibition Japanese variety of rounded form and made up of rolled florets which intercross attractively. The colour is a light chestnut-crimson, and the old gold reverse shows attractively at the tip of the florets.

Carinata.—An Incurving Japanese variety of large size and good exhibition form. The broad florets are of light chestnut colour, and they show much of their golden reverse.

Miss Mary Powell.—A good Single, of the Mensa type, but larger in size, and yellow colour freely stippled with deep terra-cotta.

Yellow Majestic.—A magnificent yellow counterpart of the well-known exhibition variety. The above varieties were shown by Mr. H. Woolman.

Everlasting.—This handsome Single received the R.H.S. Award of Merit on the previous Tuesday. See p. 378.

Thalia.—Also see p. 378. These two varieties were shown by Messrs. Keith Luxford and Co.

Fifi.—A particularly charming little variety for growing in spray form. The fully double little flowers are a bright pink colour.

Iolantha.—A Japanese variety of the size and type valued for market purposes as disbudded blooms. The flattish flowers have narrow, soft pink florets. These two varieties were shown by Messrs. Cragg, Harrison and Cragg.

Lady Finlay.—A magnificent white Japanese variety of very large size and excellent form. It is said to be a seedling from Queen Mary, but has much narrower florets and more depth than that variety.

Mrs. H. Dunkets.—A large exhibition Japanese variety with fairly broad, drooping florets of an uncommon bright plum-purple colouring. The two above varieties were shown by Mr. R. Evans, gardener to Lady Finlay, Warfield Grove, Bracknell.

Competitive Classes.

Although there were only two exhibits in competition for the Affiliated Societies' Shield, they were very attractive. The Shield and first prize were won by the **Finchley Chrysanthemum Society** with an admirable exhibit of the various types of Chrysanthemums. The **Borough of Croydon Chrysanthemum Society** was awarded the second prize for a very good collection.

Open Classes.

The first prize in the William Wells Memorial Class and *The Gardeners' Chronicle* Silver-gilt Medal were won by the Hon. Sir **John Ward** (gr. Mr. Charles Beckett), Chilton, Hungerford. This class required three blooms each of Japanese varieties staged in vases, and it made a very imposing display. The first prize winning collection was of admirably even quality, and the chief varieties were Red Majestic, Wm. Rigby, Mrs. Gilbert Drabble, Mrs. B. Carpenter and Julia. In the admirable second prize collection, Capt. R. B. **Brassey** (gr. Mr. J. G. **Quinn**), Cottesbrook Hall, Northampton, had splendid blooms of Victory, Mrs. R. C. Pulling, Mrs. G. Monro, junr., Mrs. P. Murray and Wm. Rigby.

The quality of the exhibits was even higher in the class for three blooms each of any white, yellow, pink, bronze, crimson and any other colour, where Sir **John Ward** was again first. He had superb vases of Louisa Pockett, Red Majestic, Mrs. Algernon Davis, Wm. Rigby and Mrs. A. Holden of intense colour. **Lady Annaly** (gr. Mr. D. Cameron), Holdenby House, Northampton, were second with good vases of Francis Joliffe, Majestic, Wm. Rigby and Harold Wells.

Sir **John Ward** continued his great triumph by being awarded the Holmes Memorial Challenge Cup for thirty-six magnificent Japanese blooms in distinct varieties. These were of great depth and substance and beautifully fresh. The collection included specimens of Victory, Majestic, Mrs. J. Palmer, Norman Chittenden, Alec Hervey, Red Majestic and Madame Stuart.

The competition was very good in the class for twenty-four distinct Japanese varieties. Capt. **Brassey** was first with a noteworthy exhibit, including superb blooms of Hon. Mrs. Dalgety, Duchess of Westminster, Mrs. A. Davis and Norman Chittenden. R. L. V. **Sherwood**, Esq. (gr. Mr. J. Heath), St. Gatien House, Newmarket, was a very good second, and his best varieties were Mrs. A. Brown, Julia and Thomas W. Pockett. **Viscount Hambledon** (gr. Mr. W. Turnham), Greenlands, Henley-on-Thames, was a close third in this admirable class.

Competition in the new Experimental Class was also excellent. As we have suggested in our opening remarks, the object of this class was to ascertain the ideal size of show boards to display fully the largest present-day exhibition varieties. The Society provided boards with tube holes ten inches apart. The class required twelve distinct Japanese varieties, and it was at once seen that the increased space on the new boards was none too much for the magnificent blooms which were exhibited by R. L. V. **Sherwood**, Esq., who won the first prize, for there was rarely any space between them. His very best blooms were of Julia, General Petain, Wm. Rigby, Mrs. A. Brown, Louisa Pockett and Majestic. The high standard of the first prize collection was closely approached by that of **Lady Annaly**, who was second, and had superb specimens of Julia, Mrs. George Monro, junr., and Wm. Rigby. F. C. **Stoop**, Esq., was a very good third in this interesting class. Mr. **Sherwood** was also first in the class for six distinct Japanese varieties with another admirable exhibit which included Mrs. A. Brown, Mrs. B. Carpenter and Julia, of great merit. Mr. **Stoop** was a very close second, and his best varieties were Julia, Mrs. B. Carpenter and Victory.

The blooms in the colour classes were of great excellence, and in several classes the judges must have experienced considerable difficulty in selecting the prize winners. Three blooms of a distinct variety were required in each class. The best white was Louisa Pockett, shown by **Viscount Hambledon**, and Mrs. A. Brown, shown by R. L. V. **Sherwood**, Esq., was the second best, while he had in Princess Mary the best yellow; which variety, shown by W. S. **Graves**, Esq. (gr. Mr. J. Marshall), Newells, Horsham, was second. Showing splendid blooms of Majestic, R. L. V. **Sherwood**, Esq., was first in the class for any other colour. F. C. **Stoop**, Esq., was second with Mrs. A. Davis, and Sir **Jeremiah Colman**, Bart. (gr. Mr. Collier), Gatton Park, Reigate, was third with immense blooms of Mrs. B. Carpenter.

Although G. H. **Fisher**, Esq. (gr. Mr. T. Finch), Downs View, Purley, was the only exhibitor in the chief classes for Incurved Chrysanthemums, he showed good typical varieties fully deserving the first prizes he received. His vase of six varieties included Charles H. Curtis, Calypso and Ondine. His twelve, shown on a board, were even better, and the very best were Mrs. P. N. Wiseman, Chas. H. Curtis and Mrs. G. Denny, while in the class for six varieties he had Embleme Poitevine, Mrs. P. N. Wiseman, Progress and H. W. Thorp of beautiful shape.

The Decorative varieties were better than last year. **Viscount Hambledon** was first with handsome vases of Wizard, Sunshine, Alfred Durbin and other varieties; while F. C. **Stoop**, Esq., who was a good second, had lovely vases of Pourpre Poitevine, G. Carpenter and Mr. E. Reeves.

Competition was poor in the classes for Single Chrysanthemums though the few exhibits were of very good quality. F. C. **Stoop**, Esq., was awarded the first prize for such varieties as Mrs. H. Hunter, Catriona, West Hall Gem and Mrs. Spencer Hamilton in the class for six vases of large Singles, shown with their own foliage, and in the following class **Viscount Hambledon** was awarded the first prize for six handsome vases which included Supreme, Catriona, Mrs. W. Smith and Phyllis Cooper. Mrs. **Guthrie** (gr. Mr. P. Burr), East Haddon Hall, Northampton, was awarded the first prize for a vase of small Singles.

The two displays of Singles were exceedingly effective, and F. J. **Yarrow**, Esq. (gr. Mr. A. Robertson), St. John's Wood, London, won the first prize with exceptionally well-grown flowers arranged with great artistry. This outstanding exhibit included superb blooms of Mrs. R. Harris, Susan, Mrs. W. E. Catlow, Annette, Stuart Smith, and Mrs. J. Palmer. Mrs. **Guthrie** was second with a tastefully arranged display of very good blooms.

The foregoing classes were for open competition amongst amateurs only, but there was no trade exhibitor in the following classes, which were "Open to All." The George Monro Challenge Cup was won by Mrs. **Guthrie** with twelve excellent vases of large Singles. Her outstanding varieties were Molly Godfrey, Hilda Shoebridge, Mrs. R. Harris, Robert Collings, Sandown Radiance and Mrs. W. J. Godfrey. Capt. C. O. **Liddell** (gr. Mr. S. Jones) Shirenewton Hall, Chepstow, was second, and he had beautiful vases of Pride of Devon and Bronze Molly in his fine collection.

Mr. H. **Runcieman**, Wanstead, was awarded the first prize for an excellent exhibit of six vases of large Singles. His varieties were Dignity, Mensa, Stewart Smith, Crimson Velvet, Golden Mensa and Jessica. **Lady Annaly** won the first prize in the class for three vases of large Singles with superb blooms of Mrs. T. Hancock, Catriona and Supreme.

The Floral Decorations were a very attractive feature of the show. In the open section Miss N. **Hedge**, Sydenham, was first for both a large vase of exhibition Japanese (Fig. 176) and of Incurved varieties with very artistic arrangements; Mr. F. J. **Yarrow** was a good second in the Japanese class. The first prize was awarded to Mrs. **Robinson** for a large basket of Chrysanthemums. In the amateurs' section, G. **Richardson**, Esq. (gr. Mr. J. Vanstone), Tulse Hill, was first with a handsome vase of large blooms in the class for a Sideboard Decoration, and J. F. **Junkin**, Esq. (gr. Mr. N. Dennis), Kenley, was second with three vases of beautiful blooms. The best vase of five Japanese blooms was shown by **John Rowlett**, Esq. (gr. Mr. H. Hammond), Sanderstead. G. **Richardson**, Esq., was first in the class for a large vase of Chrysanthemums. First prizes were awarded to A. E. **Taylor**, Esq., G. H. **Fisher**, Esq., and G. **Richardson**, Esq., in the remaining decorative class for artistic arrangements.

The general quality in the Amateurs' Section was very gratifying, and in most classes the competition was very good. The Silver Medal offered for the best exhibit in the two subsections, was won by Mr. B. **Carpenter**, Finchley, with his magnificent exhibit of three vases of Japanese varieties, not necessarily distinct. He showed splendid blooms of Majestic, Wm. Rigby, Mrs. A. Brown, Mrs. Charles Fox, and Thomas W. Pockett.

In this section, **John Rowlett**, Esq., set up six excellent vases of Singles, which included Supreme, Flossy, Catriona and Phyllis Cooper, and he was also first with three very fine vases of Japanese varieties in a strong class. S. W. **Wickens**, Esq., won first prizes for twelve very good Japanese blooms on a board, six Japanese varieties, six Incurved, and three vases of Single varieties. In sub-section B., W. **Staley**, Esq., Alverstoke, was first with twelve especially good Japanese blooms, of which Viscount Chinda, Mr. Gilbert Drabble and Majestic were the very best.

Non-Competitive Exhibits.

The large trade groups of splendid blooms, which were arranged around the hall, made imposing and exceedingly attractive displays. Mr. H. J. **Jones** filled a very large space with splendidly-grown flowers, arranged with great skill. Against the wall he had tall stands of exhibition varieties, set off by leaves of the Sweet Chestnut and separated by tall, graceful plants of Grevillea robusta. The chief varieties were Majestic, Mrs. L. Barton, bright chestnut; Wm. Rigby, Dawn of Day, J. Symonds, Mrs. A. Holden, Tom Abbott, a green-yellow Japanese, with Mrs. Edith F. Jones, a new yellow Incurved; Mona Davis and James Baxter, an effective association of mauve and wine-crimson. The body of the group was filled with splendidly-grown examples of the medium-sized Japanese, Singles and other types. Along the front, Mr. **Jones** placed gilt baskets containing many delightful colour schemes in Chrysanthemums. (Large Gold Medal.)

An admirable collection was displayed by Messrs. **Keith Luxford and Co.** Their large Japanese varieties included excellent blooms of Thomas W. Pockett, Autumn Tints, Mrs. R. C. Pulling, Mrs. T. Slack and Belle Chinoise, a rich yellow variety of large size. The medium-sized varieties were also well represented, and the chief were Maurice, of rich orange colour, R. A. Roots and alba. Amongst the Singles were Raleigh, crimson, and Cytie, yellow, and the new Everlasting, of great merit. (Gold Medal.)

A particularly attractive display of market Japanese varieties and Singles was made by Messrs. **Cragg, Harrison and Cragg.** The former included two large vases of their new Iolanthe, Jean Pattison, rich deep orange; Mrs. R. Felton, rich crimson, and Aldyth, crimson-chestnut. In the middle of the group there was a large vase of glowing blooms of the new pink Fifi. (Gold Medal.)

In a corner space, Messrs. J. W. **Cole and Son** had an attractive collection which included Julia, Mrs. George Monro, junr., and Mrs: S. A. Tickle, large Japanese, and White Rayonante, Mrs. R. F. Felton and Jean Pattison. (Silver Medal.)

Messrs. **Hewitts** retained their exhibit from the previous Tuesday. (Silver Medal). Near the Orchid Annexe Messrs. **Barham and Wood** had good vases of Market Red, Cranford Pink, Cranfordia and other useful varieties. (Silver Medal..

Lady Macnaghten (gr. Mr. F. J. Bright), Sandhurst Lodge, Berks., exhibited a group of particularly well-grown pot plants. These were Single specimens raised from cuttings inserted at the end of November last year, and illustrated great cultural skill. The chief varieties were Jean Pattison, Phyllis Cooker, H. W. Thorp and Susan (Silver-gilt Medal).

Although he did not exhibit the Pompons he grows so well, in the competitive classes, J. W. **Hussey**, Esq., Matford Lodge, Exeter, set up an admirable display of these fascinating little flowers. These were naturally-grown and disbudded blooms, and all particularly well-grown. Amongst the former was a vase of Baby of the smallest size imaginable. Other varieties included Pygmalion, Snowdrop, Mrs. Waterer, Ouray, Katie and Wm. Kennedy. (Silver Medal).

In an exhibit of well grown decorative varieties Mr. A. G. Vinten included vases of Exmouth Pink, Godfrey's Triumph, Uxbridge Pink, Mr. G. Hutt and Ondine, with other useful Chrysanthemums. (Silver Medal).

A large Silver-Gilt Medal was awarded to Mr. H. Woolman for his fine non-competitive exhibit.

GLASGOW AND WEST OF SCOTLAND HORTICULTURAL.

At the annual meeting of members presided over by Mr. Charles Young, on Wednesday, November 3, the Treasurer submitted his financial statement for the year which showed a deficit of £158. It was explained that the exhibition held in September had resulted in a loss of £303, despite an attendance of 7,000 people, and that the shortage was due to a material increase in the prize money and an advanced charge for the use of the hall. There has also been a considerable falling off in the membership, and several suggestions were made with the view of supplementing the revenue and decreasing the expenditure.

Sir John Reid was reappointed President, and the vacancies in the directorate caused by the retirement of Mr. Henry Reid and Mr. James Kerr were filled by the election of Mr. George Banks, Botanic Gardens, in the gardeners' section, and Mr. D. Stewart, Balmaha, in the amateurs' division.

Mr. Dobson explained that no definite information could be given regarding the use of the new Kelvin Halls for next year's show.

BIRMINGHAM AND MIDLAND COUNTIES.

At the fortnightly meeting of the above Society, held on the 25th ult., a lecture was given by Mr. J. Smith, Superintendent of the City Parks and Cemeteries, on a "Review of the Birmingham Horticultural Society's Show, 1926." There has been a local feeling for some time that a revision of the schedule was necessary to bring the Society in closer touch with the public and to stimulate more interest among trade exhibitors.

The lecturer demonstrated the requirements of the Birmingham public from the view point of horticultural interests, and stated that Roses, herbaceous plants, Violas and fruit trees are ever in demand.

The lecturer went on to demonstrate how such exhibits should be staged with a view to be of educational value to the purchaser.

READING AND DISTRICT GARDENERS'.

At the last fortnightly meeting of this Association, a lecture on "The use and Influence of Manures on Plant Life," was delivered by Mr. A. J. Macself, Hamilton Road, Reading. In using farmyard manure, he suggested that it was more satisfactory to give a slight dressing of the dung and to apply a dressing of a good fertiliser when the plants had become more fully grown. Mulching as a means of conserving moisture and supplying food when the plants were in need of it—was dealt with, as was also green manure and its effects on various soils. Mr. Macself also dealt with chemical manures.

As showing the shortness of the vegetable crops during the present season, there was a great falling off in the number competing in the competitions for collections of vegetables, and in Class 1 there was no entry. In Class 2, the first prize was awarded to Mr. F. Haines, Calcot; the second to Lt.-Col. F. E. Mascall, Shinfield, and the third to Mr. R. Haines, Calcot. In Class 3, Mr. E. Iles, Brighton Road, Reading, was placed first, and Mr. A. E. Kirby, Amity Road, Reading, second.

In the non-competitive section a First Class Certificate was granted to Mr. Turner, South View, Bath Road, Calcot, for excellent plants of Blanche Poitevine Chrysanthemum. Mr Clacy, Sidmouth Grange Gardens, exhibited excellent fruits of Best-of-All Tomatos.

ROYAL SCOTTISH ARBORICULTURAL.

Aberdeen Branch.

Whether thin or thick planting is most conducive to the health and growth of forest trees was discussed at a meeting of this branch held at the Cruickshank Botanic Gardens—a valuable asset presented to Aberdeen University in memory of the late Dr. Cruickshank—on Saturday, October 30. Mr. John Michie, M.V.O., the president of the branch, occupied the chair, and there was a representative attendance. Professor Borthwick, the first occupant of the recently founded Chair of Forestry in Aberdeen University, gauged the position pretty accurately when he said that the matter of thin or thick planting was one which could not be settled on a yes or no basis. It was not a scientific and not entirely a practical question; it was a question of pure commonsense.

The President, who was for many years head forester and subsequently factor on the Royal Balmoral estates, opened the proceedings with a brief survey of the arguments in favour of both methods. In former years, he said, forest planting was done very much closer than was frequently recommended nowadays, and for that practice there were many good reasons. Plants were plentiful and could be reared cheaply, while by thick planting there was less probability of having to fill up from failures by the inroads of nibbling and browsing animals. The cost of labour was a mere fraction of the present-day high rates of wages. This thick planting meant a distribution of young trees at from three to five feet apart. There used to be a maxim with foresters of years past: "Plant thick and thin quick." Now thinner planting was being advocated and carried out by the more advanced and scientific planter. Plantations were now being formed with a distribution of plants at from six to eight feet apart, and there were good reasons for adopting that system. By wide planting all the young trees were given opportunities of developing robust constitutions and strong growth. Thoroughly good, careful, painstaking planting meant success, whereas slovenly work often resulted in failure. Every transplant must grow on if the advocates of wide planting were to succeed in proving that their policy was the better.

Mr. John Rule, forester on the Huntly Lodge Estates, Aberdeenshire, advocated wide planting more carefully done. Instead of putting in three thousand plants in a day they should put in five hundred, and do it properly. He recommended planting about five feet apart, and that the work should be done carefully.

Mr. Sydney J. Gammell of Countesswells, Aberdeenshire, one of the greatest authorities in forestry among Scottish landed proprietors, warmly advocated the policy of thick planting.

Mr. Charles S. France, an ex-president of the branch, and a practical forester of many years' experience, pointed out that there was one factor they would have to consider—the question of expense. He considered that an average view of the matter should be taken, and the greatest distance apart he would plant was four feet.

Mr. J. F. Annand, a member of the Forestry Commission, thought they had to consider the financial side of the question. They were trying to produce a crop that would give some returns. He thought that if they adhered strictly to the old method of planting—four thousand per acre, or so—they could not possibly hope to get a return: the expense would be far too great. He thought a great deal depended upon the species with which they were dealing. Larch, he thought, should be planted a good deal wider than Scotch Pine. With regard to the prospects of returns from thinnings, probably in certain cases it might pay to plant three feet apart and thin early. On the other hand, in districts far from the markets, and where returns from thinnings could probably not be obtained, it seemed better to adopt a medium course, and plant rather widely. Another point was that in some soils planting could be done closer than in others.

Provost Munro, O.B.E., Banchory, Kincardineshire, head of a large timber and sawmilling firm, said, from his point of view, if they wanted clean timber, the closer they could plant the better.

Summing up the points of the discussion, Professor Borthwick gave his views, adding that the question of spacing must, in the long run, be ruled by climate.

MARLOW AND DISTRICT CHRYSANTHEMUM.

On November 3 last, the above Society held the most successful show in its history. The Public Hall at Marlow was filled with excellent blooms, and Mr. H. A. Elkington, the new Hon. Secretary, and the Executive are to be congratulated on the success of their efforts. There were more groups of Chrysanthemums in pots than in former years, and the plants were especially well-grown. The Silver Medal of the National Chrysanthemum Society for the best bloom in the show was awarded to a magnificent specimen of Princess Mary, shown by Mrs. Hornby Lewis, who also was awarded one of the Society's Certificates for her eight vases of Japanese blooms as being the most meritorious exhibit in the show. A second Certificate was awarded to a particularly fine example of Mrs. R. C. Pulling, shown by F. A. Bontor, Esq., which was the runner up to Mrs. Lewis for the Silver Medal.

The first prize group of Chrysanthemums in pots was shown by Lady Vansittart Neale (gr. Mr. McCaul), and this was composed of dwarf plants carrying especially fine blooms of Majestic, Mrs. George Monro, junr., Mrs. Algernon Davis, Mrs. Gilbert Drabble, and similar good exhibition varieties. In the most creditable second prize group of J. F. A. Bontor, Esq. (gr. Mr. W. Clark), there were particularly good specimens of Mrs. R. C. Pulling, Louisa Pockett and Edith Cavell. Although the specimen plants did not reach the exceptionally high standard of last year, they were very meritorious, and the first prize was won by Lady Vansittart Neale, with a large and shapely specimen of Mrs. R. Luxford.

An especially high standard of excellence obtained in the open classes for exhibition blooms in vases. As previously mentioned Mrs. Hornby Lewis (gr. Mr. A. E. Friend), exhibited eight vases of large Japanese varieties, three blooms of each of great excellence. The varieties were Princess Mary, Mrs. George Monro, junr., Mrs. F. T. Fleming, Queen Mary, Dawn of Day, Mrs. Peter Murray, Majestic and Mrs. B. Carpenter. A. G. Bendir, Esq. (gr. Mr. G. Clark), Medmenham Abbey, Bucks., was a good second in this superb class, and included particularly good blooms of Mrs. George Monro, Junr., and Mrs. Gilbert Drabble.

The competition was very keen in the class for three blooms of any one Japanese variety. The first prize was awarded to F. A. Bontor, Esq., for three excellent blooms of Mrs. R. C. Pulling. Lady Vansittart Neale was a very close second with beautiful blooms of Mrs. Algernon Davis, and Mrs. Hornby Lewis was third with Majestic, of fine quality. Mrs. Hornby Lewis won the first prize with a tastefully arranged display of cut Chrysanthemums of high quality. The best of three exhibits of six vases of Singles, six blooms in each, was staged by A. G. Bendir, Esq., who included Portia, Supreme and Mrs. Goodburn.

In the local classes the principal exhibits were of great merit. A. G. Bendir, Esq., showing fine blooms of Golden Champion and Mrs. Peter Murray, was first in the class for two vases, three blooms in each. Mrs. Hornby Lewis had the best twelve varieties, distinct, shown on boards. This was an excellent exhibit of G. Kelly, Mrs. George Monro, junr., Princess Mary, Majestic and other large exhibition varieties. A. G. Bendir, Esq., who was a good second, had particularly meritorious blooms of Mrs. Peter Murray, Dr. F. M. Foyles and Mrs. George Monro, junr. In the amateurs' section, Mr. J. Wellicome was the most successful exhibitor and his board of six Japanese blooms were of very high quality.

At the back of the platform, Mr. S. J. Chalk set up an exceedingly attractive trade display of especially well grown plants and cut Chrysanthemums and garden sundries.

ROYAL HORTICULTURAL.

The following Awards have been made to the undermentioned Dahlias by the Royal Horticultural Society after trial at Wisley.

Dahlias.

Awards of Merit.

Small-flowered Paeony.—*Cintra*, sent by Mr. A. J. Cobb; *Yellow Queen*, *Mrs. H. C. Scrimgeour*, both sent by Messrs. J. Cheal and Sons; *Gloria*, *Clara Hart* and *Diophen*, these three sent by Messrs. J. Burrell and Co.

Dwarf Paeony-flowered.—*Hermia*, sent by Messrs. J. Burrell and Co.

Decorative.—*Mrs. A. R. Mountain*, sent by Messrs. J. Cheal and Sons; *Menny Carlée*, sent by Mr. Carlée; *Evelyn Hancock*, sent by Messrs. J. Stredwick and Son; *Macdonald*, sent by Mr. Geysendorpher; *Henry B. May*, sent by Messrs. J. Stredwick and Son; *Secretary Voors*, sent by Mr. J. G. Ballego; *Tally Ho*, sent by Messrs. J. Stredwick and Son; *John Mensing*, sent by Mr. Topsvoort; *Phaon*, sent by Mr. C. Turner; *Jersey Beauty*, sent by Mr. H. J. Jones.

Small-flowered Decorative.—*Rose Elegance*, sent by Mr. Carlée; *Cheal's Pink*, sent by Messrs. J. Cheal and Sons.

Dwarf Decorative.—*Preston*, sent by Messrs. Dobbie and Co.

Camellia Flowered.—*Prudence*, sent by Messrs. J. Burrell and Co.

Pompon.—*Mavis*, sent by Messrs. J. Cheal and Sons.

Cactus.—*Alice Amos*, sent by Messrs. J. Stredwick and Son.

Mignon Single.—*H. J. Jones*, sent by Messrs. Carter Page and Co., and Mr. H. J. Jones; *Kingcup*, sent by Messrs. J. Cheal and Sons; *Lady Aileen*, sent by Mr. H. Woolman.

Highly Commended.

Single, Type A.—The Countess, sent by Messrs. J. Cheal and Sons.

Collerette.—Mabel Mary, sent by Messrs. J. Cheal and Sons.

Paeony.—Festus, sent by Mr. C. Turner.

Small-flowered Paeony.—Hilda D. Wheeler, sent by Mr. A. J. Cobb; Olwen, Nanny, Pattie, Ada and Hosea, these five sent by Messrs. J. Burrell and Co.

Dwarf Paeony-flowered.—Paisley Gem, sent by Messrs. Thyne and Son.

Star.—Petworth Star, Burstow Star, Hyde Star, Rusper Star, Rowley Star and Purple Star, all sent by Messrs. J. Cheal and Sons.

Cactus-flowered.—Show Bunting and Margaret, both sent by Messrs. J. Stredwick and Son.

Dwarf Cactus.—Amanda, sent by Messrs. Carter Page and Co.

Mignon Single.—L'Innocence, sent by Messrs. Ballego; Louise, Pembroke, Daffodil, Kathleen, Dazzler, Julius and Daphne, these seven sent by Messrs. J. Cheal and Sons; Turner's Gem, sent by Mr. C. Turner; Pink Coltness Gem, sent by Messrs. Dobbie and Co.; Betsy, sent by Mr. Carlée; Jubel, sent by Mr. J. B. Riding.

GUILDFORD AND DISTRICT GARDENERS'.

The annual meeting of this Association was held on the 28th ult. Falling as it did on the worst day of the month, the bad weather somewhat reduced the attendance.

In presenting the annual report, together with the statement of accounts, the President, Alderman W. T. Patrick, J.P., brought the operations of the Association under review. During the year 927 members had paid their subscriptions, and it was added, twenty-three new members had joined since the report was made up. The highly successful summer show had paid its way and left a balance to the good, but other branches of work had been run at a little loss. This was particularly the case with the monthly publication. The *Journal* had increased in number of pages, and the circulation had gone up from six hundred at the start to nine hundred copies per month, distributed free to members and, obviously, the free distribution had made heavy demands upon the funds. Notwithstanding this there was still a small balance at the end of the year. Appropriate and feeling reference was made to the loss by death of good friends and workers during the year—Mrs. Hamilton Fellows, Mr. R. Kinggett, and Mr. Nicholls. The lectures last winter, and the outings during the summer just past had been singularly successful, with a greater average attendance than in any previous year.

A warm tribute was paid to Mr. A. E. Tylecote for his self-denying work as Show Secretary, in which capacity he had devoted time and thought and labour unstintedly. Sincere thanks were also expressed to Mr. Norman Nation Hon. Treasurer, and to Mr. E. Sawyer, Hon. General Secretary.

In replying, Mr. Tylecote confessed to a feeling of bitter disappointment in being compelled to lay aside the work which for five years had given him so much pleasure. He had been hoping to still carry on, but his doctor said he must give up, at any rate, for a time. Mr. Tylecote will still render valuable service to the Association, for he was elected to fill a vacancy on the general committee, as also was Mr. Newman, gardener to the Earl of Onslow, Clandon Park. The other members of the committee, Mr. Binfield, Mr. Blake, Mr. Earl, Mr. Hebbourn, Mr. Kirkwood, Mr. Blunden, Mr. Martin, Mr. Souter, Mr. Wells and Mr. White were re-elected.

Mr. H. T. Patrick, Mr. Norman Nation and Mr. E. Sawyer were re-elected to their respective offices. The most pressing and serious task awaiting the new committee is to find a successor to Mr. Tylecote as Show Secretary.

ANSWERS TO CORRESPONDENTS.

Chrysanthemum Buds Failing to Open.—*J. A. J.* No doubt previous dry weather had something to do with the failure of the buds to unfold, but we believe the chief cause is the damp and cold atmosphere since the plants were housed.

Crataegus Shoots Diseased.—*A. S.* The Thorn shoots received for examination have been injured by a minute insect (Cecidomyia crataegi.) The condition is common throughout the country and fortunately does little harm to the host plants. The periodical clipping of Thorn hedges keeps the insect in check. Thorn trees may be kept clean by occasional spraying with a paraffin wash, but unless the trees are very badly affected it is doubtful whether it is worth while giving the matter serious attention considering how little actual harm is done.

Grapes Affected with Spot Disease.—*X.Y.Z.* You do not state the age of your Vines, but we gather from the description that the roots of your Muscats have penetrated into the cold, wet subsoil with the inevitable result of gross growth, shanking and disease. Your best course would be to make a new border, inside only, and plant young vines, or if you prefer it, use the present vines. Prepare the compost in advance to have all in readiness so that the work may be carried out as expeditiously as possible, when there will be no possible danger of losing the Vines, providing the work is carried out in a workmanlike manner. Carefully lift the roots as the old soil is removed and keep them moist and covered with mats while the work proceeds. Examine the drainage, make the new border firm, spread out the roots carefully and evenly nearer the surface, and water thoroughly. Do not force the growth too early next spring, when the Vines will quickly recover and improve each succeeding year.

Lady Gardener's Notice.—*E. F.* The question turns upon what was actually arranged at the time of the engagement. Was it definitely agreed that the head lady gardener should be engaged for a specific period to cover the winter ? If not, it would seem that in any case she was entitled to a month's notice, as it has been held by the High Court that in the absence of any special agreement as to notice in the terms of employment, or any special custom in the particular part of the country, a head gardener is entitled to a month's notice or one month's wages in lieu of notice, and although the decision was in respect of a male gardener, there would seem no reason why it should not apply to a head lady gardener.

Melons with Bitter Flavour.—*R. H. G.* It is difficult to account for some of your Melon fruits being bitter while others of the same variety were of good flavour, unless you have overwatered them and the compost has become sour. If you use the same kind of turf next year add to it a good sprinkling of old lime rubble and a little bone-meal or, better still, a five-inch potful of sulphate of potash to each barrow-load of compost. Increase the amount of ventilation as the fruits approach ripeness, and gradually reduce the moisture, and all bitterness of the fruits should disappear.

Names of Plants.—*J. P. C.* Probably Chrysanthemum Débutante. *J. C. J.* Pyrus Aria. *W. R. B.* Calamintha vulgare. *H. B. O.* 1, Chrysanthemum uliginosum; 2, Acanthus Mollis; 3 and 11, Cupressus Lawsoniana variety; 4, C. funebris; 5, Asplenium bulbiferum; 6, Selaginella denticulata; 7, Begonia ascotiensis; 8, not recognised; send in flower; 9, Galega officinalis; 10, Cupressus pisifera var. squarrosa; 12, Sedum spectabile. *R. E.* 1, Gynerium Rendatleri; 2, G. Gloire de Musea; 3, G. argenteum elegans; 4, G. a. monstrosum. *H. McD.* If you will send specimens we will endeavour to name your plant.

Communications Received.—P. G.—T. B.—W. S.—H. C.—H. A.—F. W. R.—J. J. S.—A. E. M.—H. M.—C. T.—E. T. E.—J. F.—H. G. K.—H. E. W.—W. A. C.

TRADE NOTES.

The regulations made under the Seeds Act, 1920, require, in the case of a sale of seed Peas, that the seller shall deliver to the purchaser a statement in writing containing certain specified particulars, including (1) the name and address of the seller; (2) a statement that the seeds have been tested in accordance with the provisions of the Act; (3) the kind of seed: (4) the percentage of purity, if below ninety-seven per cent.: and (5) the percentage of germination; provided that if the percentage of germination is not less than the authorised minimum percentage of germination prescribed in the schedule to the Regulations (viz., seventy per cent.) a statement to that effect, which shall include the authorised minimum percentage of germination, shall be sufficient.

As was the case last year, there are indications that the germination of the 1926 crop of seed Peas is below normal, and that consequently a considerable proportion of the Peas marketed this season will be found to germinate slightly less than the minimum percentage prescribed in the Seeds Regulations. The sale of seed Peas with a germination of less than seventy per cent. is not contrary to the Regulations provided the actual percentage of germination is declared. To avoid failures in the crop, it is advisable that seeds testing less than seventy per cent. should be sown rather more thickly than usual.

Readers requiring information and advice respecting Patents, Trade Marks or Designs, should apply to Messrs. Rayner and Co., Patent Agents, of 5, Chancery Lane, London, who will give free advice to readers mentioning *The Gardeners' Chronicle.*

the varieties that find most favour with manufacturers and are inclined to consider that the glut of ordinary, field-grown Cauliflowers affords the opportunity of brining, and thus saving a portion of the crop that it would not be worth while to send to market. Mr. Thompson points out that a close curd is necessary, with the branches quite short, and far less free than in the case of Autumn Giant and Eclipse. The best pickling varieties would seem to be Danish Giant, Erfurt, Erfurt Dwarf, Erfurt Forcing, Erfurt Mammoth and Delft Short Stem, the first-named, if of true stock, being easily the best and giving heads equal to the finest of those imported from Italy. Mr. Thompson discovered—as do all who conduct such trials—that not all stocks purchased under the same name are of equal value; thus of two stocks of Danish Giant, stock A was well ahead of stock B. This is valuable information, for if true strains of the best sorts can be obtained some progress will have been made towards establishing in this country the cultivation of Cauliflowers for pickling purposes. The author points out that good prices are obtained from manufacturers for the right article, and that in his estimate the varieties most suitable for pickling are among the very best for table purposes, although they do not carry such large heads as the better-known sorts. By cultivating varieties of Cauliflowers suitable for pickling, the grower will have two strings to his bow—the market and the pickle manufacturer—and would be saved from the tremendous fall in prices brought about by a glut.

Electric Heating in the Garden.—An interesting article in *Die Gartenwelt* (Berlin), deals with the question of electric heating for hot-houses and frames—a method which would be more widely employed if the cost were not, as at present, prohibitive. The author of the article (Herr Schlosser) takes as an example a house ten metres long and about three metres wide, and so constructed that with an outside temperature of -10° C., if the house is to be maintained at +3° C., it will lose every twenty-four hours about 70,000 units of warmth. To replace this loss and maintain the temperature named, would require about 81·5 kilowatt hours of electricity, reckoning a KW hour at 860 units. He gives as the price of a KW hour the sum of sixteen pfennigs, which would make the cost of heating for twenty-four hours over thirteen marks (or shillings). If a temperature of more than +3°C. is to be maintained, the cost will, of course, be proportionately higher. As the above figures may not convey very much to the English grower, it will be interesting to see how they compare with the price of hot-water heating in Germany, as, although prices vary in different parts of Europe, the proportionate cost is instructive. It is found that a kilo (= 2·2046 lbs.) of boiler coke produces 7,500 units of heat, a hundred kilos costing two-and-a-quarter marks, or 2s. 3d. Thus, to produce the requisite 70,000 units, about 18¼ kilos would be required, at a cost of 0.83 mark. By this reckoning, the electric method would cost 15·7 times as much as the hot-water; but in practice the difference might not be quite so great, as it is impossible to gauge to a nicety the amount of coke required to maintain the temperature at the exact level required, whereas in a system worked by electricity, there is an arrangement by which, when the atmosphere has reached the required warmth, the heat is automatically turned off. Not a particle of heat is wasted, and the house is warmed by the very minimum of current. At present, however, the price is certainly prohibitive in the ordinary way, though one or two of the larger growers in Germany are employing electricity in special houses. If the price fell sufficiently to permit the economic use of this form of heating, there is no doubt that its cleanliness, simplicity and reliability would commend it to progressive nurserymen.

New Berlin Park.—Berlin is shortly to possess a new park, to be called the Georg von Siemens' Park, after the late founder, and for many years Director, of the Deutsche Bank. The land to be thus employed, which belonged to the family of the deceased, lies between the Mariendorf and Süd railway stations, and will contain a memorial to the late Herr von Siemens which was made over formally to the town authorities on the 23rd of October, the twenty-fifth anniversary of his death. The park covers 8,000 square metres, and will be greatly appreciated by those living in the neighbourhood.

The Flowering Cherries of Japan.—Mr. Collingwood Ingram, in his interesting article on p. 409, entitled, "The Cult of the Flowering Cherry in Japan," refers to the great love and knowledge of these beautiful trees by Mr. Funatsu, whose portrait we have pleasure in reproducing on this page. Since writing his article, Mr. Ingram has received a most encouraging letter from Mr. A. Hayashi, the enthusiastic Secretary of the Sakura-no-Kwai. Among other things, he informs Mr. Ingram that his friend Prince Taka Tsukasa has accepted the presidency of the Society and is now taking a very active interest in its welfare. This is not all. Mr. Hayashi, it seems, has recently had a tract of land amounting to about ten acres offered to him for the cultivation of flowering Cherries; this is in the vicinity of Tamagawa, about twenty minutes run from Tokyo. Mr. Hayashi is to be heartily congratulated on these achievements. From this it would appear that there is about to be a revival in the cult of these trees in their native country; if so, it will be almost entirely due to the tireless efforts of the Society's Secretary.

MR. FUNATSU.

A great authority on the Flowering Cherries of Japan. (see p.409).

New President of Honor of the Austrian Horticultural Society.—Professor Hofrat Dr. Richard Wettstein, the Director of the Botanical Institute of the Vienna University, has been elected President of Honor of the Austrian Horticultural Society. Dr. Wettstein was Senior Vice-President of the Society from 1912 to 1919, and President from 1919 to 1922; he has done much to further the interests of the Society and of horticulture in general.

Honour for Dr. D. H. Scott.—We are glad to learn that the Royal Society has awarded the Darwin Medal to Dr. D. H. Scott for his contributions to palaeophytology, especially in relation to the coal period. Dr. Scott was for several years Honorary Keeper of the Jodrell Laboratory at Kew.

New Public Garden in Darmstadt.—Darmstadt rejoices in a great number of pretty private gardens, but has not been hitherto very well provided with public open spaces. However, in the course of the past summer a part of what was formerly an exercise ground for soldiers along the Rheinstrasse has been made into a public garden, the ultimate idea being, apparently, to mask the barracks and depots which are at present something of an eyesore. If the town is poor in open spaces, at any rate, the very most is made of what there are, the planting being very attractive; recently the new garden was bright with a display of Dahlias which, until quite lately, were in full bloom.

The Blackberry in New Zealand—Blackberries constitute a noxious weed in New Zealand, and the Empire Marketing Board has offered £2,000 annually for five years for research by the Cawthorn Institute in New Zealand in the entomological control of the Blackberry and other weeds. The offer has been made on the condition that the New Zealand Government and the Cawthorn Institute each contribute £1,000 annually. It is proposed to send insects that attack the Blackberry in this country to New Zealand.

Fines for Picking Wild Flowers.—According to *The National Nurseryman* (America) the State of Pennsylvania has a law which permits local authorities to impose upon offenders a fine of twenty-five dollars for each wayside flower picked. We learn that Dr. R. H. Bell, of Hope, Pennsylvania, has been instrumental in securing fines against no fewer than fifty offenders; he is particularly severe on motorists, and states that "the presumption seems that the man in the car is not bound by ethical considerations, that he is a free being, whose licence to drive a car carries with it the licence to invade, steal or destroy the property of 'country hicks'."

Dahlias as Market Blooms.—In Philadelphia, the sale of Dahlias as cut blooms has reached enormous proportions, one firm alone having sold 33,000 blooms in one week during the season just past. The great increase in the trade in these blooms is partly attributed to the care and skill taken in packing and marketing. The flowers are packed in boxes of strong board to hold about thirty blooms, unbunched, each flower being securely fastened and with room to lie flat without danger of crushing or bruising. Dahlias in such boxes have been found to arrive at the end of a journey occupying forty-eight hours in a perfectly fresh condition. The Dahlia season in America this year has been longer than usual, and, as frequently happens in such a case, the out-door stocks have injured the trade in indoor varieties, so that the first frosts have been welcomed with more than the usual fervour by growers of the indoor blooms.

New Central Markets in Brussels.—On Saturday afternoon, the 6th of November, the newly-completed range of imposing buildings which constitute the new Central produce markets in Brussels was opened with considerable ceremony by the Minister of Agriculture, who was accompanied by Director-General Van de Vaeren and the Director of Horticulture, M. Van Orshoven. The Administrative Council of the markets and a great number of distinguished visitors were also present. The Minister congratulated the Council on its achievement and made a short but graceful speech, after which he declared the markets open. The "Golden Book" was signed by most of the distinguished personages present, after which a tour was made of the buildings and an inspection of the vast display made by the tenants and co-operative societies for whose use the markets are destined. The pile, which is a truly imposing one, occupies a site in quite a new part of the town which is being laid out in a massive style, and is chiefly occupied by businesses connected with produce and alimentation. The ground covered by the new halls extends to thirty-eight ares, and beneath the surface there are vast cellars. Over the markets is a huge hall twenty ares in extent, so well provided with glass that it can dispense with artificial lighting, and above that again, a glass structure of the same dimensions which will serve as a conservatory. The total size of the markets is nearly equal to that of the Brussels Central Square (the Grand Place). Besides the markets themselves, five stories of office buildings contain sixty-seven suites of offices, each comprising five to ten rooms. The buildings have cost fifteen million francs. The day following the opening (Sunday, the 7th of November), a vast crowd of the general public visited the new markets and gazed in admiration at the superb fruits and flowers displayed there.

Local Value of a Nursery.—A curious side light is thrown upon the value of a nursery to the locality of which it forms a part by a recent case in Oregon, U.S.A. A certain nursery business was placed under a receiver who, after a careful study of the circumstances, appealed to the local Chamber of Commerce to raise funds for the purpose of restoring the industry. The receiver pointed out that the assets of the concern amounted to 1,000,000 dollars, and its indebtedness to 350,000 dollars, but, apparently, it would have been a mistake to realise the assets and the better plan appeared to be that of restoring the business as a going concern by providing local capital. The business was crippled during the war, but more than 4,000,000 dollars had previously passed through the local banks as a result of its industry. In other words a good nursery business is an important asset in any locality.

International Committee for Horticultural Congresses.—The Royal Netherlands Horticultural and Botanic Society, which organised an International Horticultural Congress at Amsterdam in 1923, has taken the initiative to create an International Committee for Horticultural Congresses. The task of this committee will be to establish a link between the succeeding International Horticultural Congresses that will be held in future in various countries, to avoid a synchronism or a too short succession of two horticultural congresses on related sciences. The Austrian Horticultural Society has undertaken to organise the Second International Horticultural Congress in the first week of September, 1927, at Vienna. The Secretary of the International Committee is Dr. M. J. Sirks, Wageningen (Holland). Invitations for appointing a representative, submitted through the courtesy of the Netherlands Government, have been accepted by the following Governments, which have nominated the members as follow :—Austria : Mr. F. Rottenberger, Direktor der Bundesgärten, Schönbrunn ; Belgium : Mr. H. van Orshoven, Directeur de l'Office Horticole, Department of Agriculture, Bruxelles ; England: Mr. H. V. Taylor, Deputy-Controller of Horticulture, Department of Agriculture and Fisheries, London ; France : Professor D. Bois, Professeur de Culture, Muséum d'Histoire Naturelle, Paris ; Germany : Mr. Schetelig, Vors, Reichsverband Deutschen Gartenbaues, Lübeck ; Hungary : Prof. Dr. A. Magocsy Dietz, University, Budapest ; Netherlands : Jhr. G. F. Tets, President of the Netherlands Horticultural Society ; Poland : Pro. P. Hoser, Agricultural High School, Warszawa ; and Switzerland : H. Duperrex, Directeur de l'Ecole Cantonale d'Horticulture, Chatelaine près Genève.

Appointments for the Ensuing Week.—Monday, November 22 : Birmingham and Midland Counties Gardeners' Mutual Improvement Association's lecture. Tuesday, November 23 : Newcastle Horticultural Mutual Improvement Society's meeting and lecture. Wednesday, November 24 : Wimbledon Gardeners' Society's meeting. Thursday, November 25 Paisley Florists' Society's meeting. Friday, November 26 : Manchester and North of England Orchid Society's meeting.

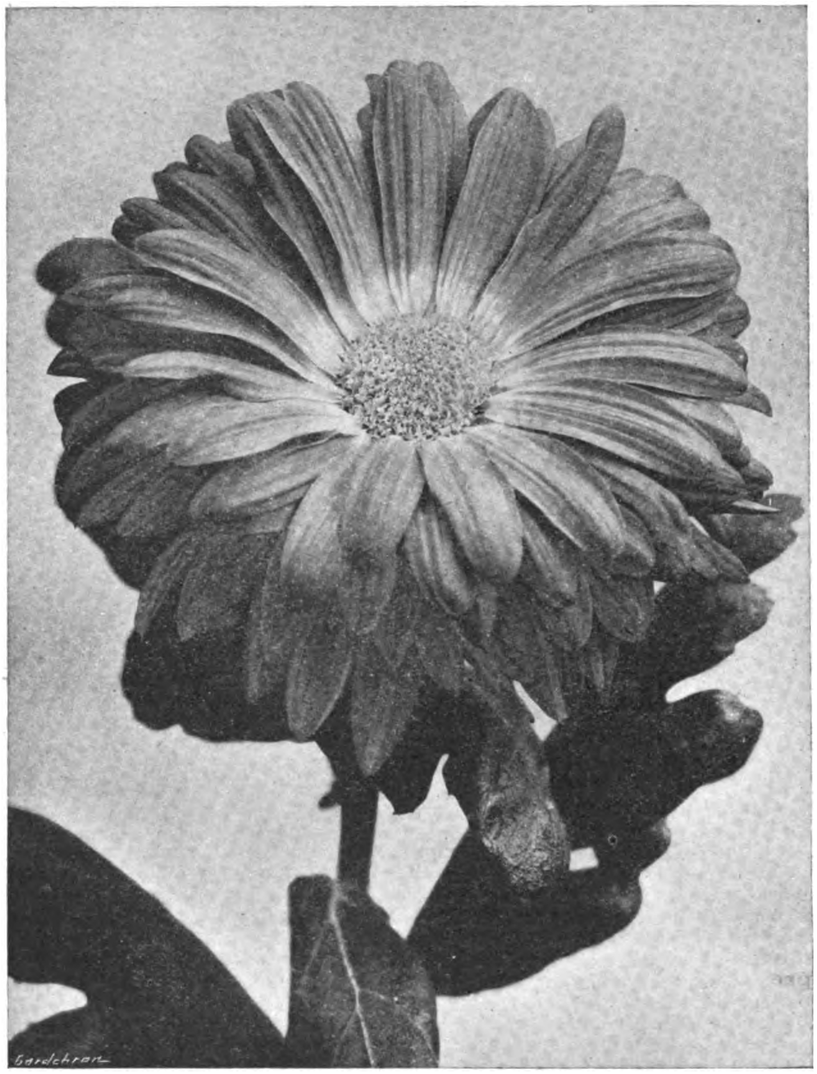


FIG. 182.—CHRYSANTHEMUM EVERLASTING.

R.H.S. Award of Merit, November 2. Flowers rich velvety crimson. Shown by Messrs. Keith Luxford and Co.

"Gardeners' Chronicle" Seventy-five Years Ago.—*Incorrect Plant Names.*—In a late number of the "Botanische Zeitung," there is a notice by Schlechtendal to the effect that the Director of the Botanical Garden at Vienna has taken occasion of the publication of the annual seed catalogue to append a leaf containing a list of such species as have been received from other Botanical Gardens under incorrect names, and that he has made up his mind to adopt the same plan himself in future. So many difficulties are attendant upon such a practice, and so large a staff of scientific gardeners and professors with all the accompaniments of a first-rate library and herbarium, for the accurate determination of every object under cultivation, that we do not think it probable that it will be very generally adopted. It is still, however, a step in the right direction, though one which cannot be fully carried out, in our own country at least, notwithstanding every wish to do so, till the more influential classes of our body politic have far more correct notions than they possess at present, of the importance of the less showy parts of natural science. Unfortunately, the taste of the present time is too much in keeping with such superficial views, but we still have hopes that better things are before us, and that the success which has attended the formation of the museum at Kew, within a space of time entirely without example in the history of such institutions, will in the end lead to some general results which may make that garden not only the first establishment of the kind beyond all comparison within the universe, which undoubtedly it is, but also a school of botany equally without parallel. *Gard. Chron., November* 22, 1851.

Publications Received.—*The Birds of the British Isles*, by T. A. Coward ; Frederick Warne and Co., Ltd., London ; price 10/6 net. *The Art and Craft of Garden Making*, by T. H. Mawson and E. Prentice Mawson ; fifth edition ; B. T. Batsford, Ltd., 94, High Holborn, W.C.1 ; price £3 15s. 0d. net. *The English Flower Garden*, by W. Robinson ; fourteenth edition. John Murray, 50A, Albemarle Street, W.1 ; Price 24/- net.—*Aspidistras and other Home Plants*, by Cyril Harding ; Harding and Co., 16, Warwick Chambers, Corporation Street, Birmingham ; price 1/-.

The Week's Work.

THE ORCHID HOUSES.

By J. Collier, Gardener to Sir Jeremiah Colman, Bart., Gatton Park, Reigate, Surrey.

Laelia.—The flower-spikes of Laelia anceps are well advanced, and as they increase in length it may be advisable to remove the plants that have been suspended from the roof-rafters to the stage until after the flowering period is over. They should be given a position where they will receive all the light available, and afforded plenty of fresh air whenever the outside conditions are favourable. As the pseudo-bulbs become thoroughly matured, the supply of moisture at the roots and in the atmosphere should be reduced, but the rooting materials should be kept sufficiently moist to enable the flowers to open. As the flower-stems develop, a gummy substance frequently forms on their apices, and this should be removed with a wet sponge, otherwise the upper bracts will adhere to the flower buds and prevent the free opening of the blooms. The coloured forms are usually the first to expand, the flowers of the white varieties opening later.

Cattleya.—Many of the autumn-blooming Cattleyas and their hybrids are passing out of flower. Rotting of the new pseudo-bulbs sometimes occurs shortly after the flower-spikes have been cut from these autumn-flowering kinds; this may be prevented by severing the flower scapes as near the top of the pseudo-bulbs as possible, for if a portion of the stalk is allowed to remain, moisture accumulates at the base, and sometimes sets up decay. The plants at this stage should be afforded a period of rest in the coolest and best ventilated part of the Cattleya house. The water supply should be diminished gradually, affording the plants only sufficient moisture to keep the pseudo-bulbs plump.

Cypripedium.—Plants of Cypripedium bellatulum, C. niveum, C. Godfroyae, and their many hybrids, should receive very careful treatment during the winter. Having thick, fleshy leaves the plants do not require so much moisture at the roots as other Cypripediums. The compost should be allowed to become quite dry between each application of water, when the receptacle may be immersed nearly to the rim, or the water may be poured around the outer edges of the compost, the object being to prevent moisture lodging in the axils of the leaves. In removing the flower scapes, cut them cleanly to the base, as if they are allowed to die down decay sometimes occurs in the centre of the shoot.

THE KITCHEN GARDEN.

By F. Streeter, Gardener to Lord Leconfield, Petworth Park, Petworth, Sussex.

Broccoli.—Should the weather turn very severe, it will be advisable to turn a number of the Broccoli plants over on their sides to withstand the frost. Take out a trench next to the end row and turn the plants over so that the heads face north; treat the second row the same, covering the stems of the first row with the soil taken from the second trench, and continue in this way. Make sure the soil is quite firm as the plants are most tender at the collar. Do not disturb the roots more than is necessary, in order to prevent undue check to the plants. A dry covering will be useful in severe weather, removing it immediately the weather becomes mild again.

Autumn-sown Spinach.—If the ground is sufficiently dry, stir the soil well along the rows of autumn-sown Spinach with the Dutch hoe, hand-weed between the plants, and thin the crop evenly. Apply a dusting of soot to the crop, which is furnishing useful leaves at the present time as is the perpetual variety sown in early August.

Draining Wet Land.—Where it is intended to break up new and water-logged ground for the culture of kitchen garden crops, draining should be done. I know of no better method than placing ordinary land drains in a trench and covering them with broken bricks or clinkers. By this means the water will pass away readily and a great saving of time result, both when working the ground and keeping it in condition.

Asparagus Beds.—The growths having ripened they may now be cleared away. Give the beds a dressing of well-decayed manure and place a little of the fine soil from the alleys on the top, shaping the beds, forking the alleys, and making the whole tidy for the winter. A start may soon be made in forcing this vegetable, either on a bed of warm leaves under frames or in a warm house. Two important points to remember are that the roots and crowns must on no account be allowed to become dry, and that all the light available is necessary to cause the stems to be well-coloured and richly-flavoured. Asparagus should be forced in a temperature of about 55°. Save a sufficient quantity of seeds for sowing in the spring.

HARDY FRUIT GARDEN.

By. W. Auton, Gardener to Viscount Elveden, Pyrford Court, Woking, Surrey.

Damsons.—The great value of these fruits as culinary and preserve material can hardly be over-rated, and, as the fruits ripen late in the year they prolong the stone-fruit season considerably. Owing to their extreme hardiness the trees may be planted as shelter belts on the exposed sides of fruit plantations and thus serve the double purpose of protection and production. The true old variety is largely planted for this purpose, but the newer varieties, King and Merryweather, are equally hardy, and produce heavy crops of large, oval fruits.

Pruning and Tying Wall Trees.—The work of training and tying fruit trees on walls should be proceeded with as circumstances permit, and among the first to claim attention are Apricots and Cherries. The Apricot bears its fruits both on the young wood of the previous year and also on spurs formed on older branches. Where the wall is of sufficient height there is no better method of training than the fanshape, and a well-trained tree of this type is easier to keep furnished than a horizontally-trained one. It is comparatively easy to remove an old or worn-out branch, replace it by young and healthy wood, and still keep a perfect balance to the tree, whereas in a horizontally-trained tree it is very difficult to replace a lost branch. Old trees sometimes make very little young wood and the clusters of spurs become too thick. In such cases it is advisable to thin the spurs to some extent. Take care that all cuts are made cleanly and that no bruising of the branches takes place, as the Apricot is particularly susceptible to gumming and canker, and injury to the wood frequently results in the final loss of the whole branch. It is good policy to clean all the branches as the work proceeds, and re tie them in their positions immediately to prevent rubbing. The pruning and training of Morello Cherries may be carried out on similar lines, but in the case of Sweet Cherries the shoots should be spurred back to three or four buds. Where summer pruning has been done, the spurs and buds should be well ripened, and there will be little pruning to do now. Young trees which have more space to furnish should have the leading shoots trained in as required. It is not wise to cut out very strong growths, as this frequently causes gumming, and the balance of the tree can be kept by disbudding next season.

Fruit Store.—Examine the stores of fruit frequently and remove any fruits showing signs of decay, but disturb them as little as possible. Ventilate the fruit room freely on all favourable occasions to maintain a cool, buoyant atmosphere and an equable temperature. Care in the ventilation of the fruit room is more important at this time of the year than at any other, as there is considerable moisture arising from the fruits stored.

THE FLOWER GARDEN.

By F. C. Puddle, Gardener to Lord Aberconway, Bodnant, Taly-Cafn, North Wales.

Preparation of the Border.—Shrub borders should be thoroughly trenched and manured before planting, for any subsequent enrichment of the soil can only be effected by the addition of top-dressings. Firm planting is essential and care should be taken to place all the roots in a natural position as the planting proceeds, and work the soil between them. The question sometimes arises how best to plant a shrub border so as to allow for future development and at the same time to get an immediate effect, with no appearance of sparseness. In some cases this difficulty may be surmounted by planting in groups and taking out some of the plants when necessary, but in the case of choice specimens this is usually impracticable, and these may be interplanted with commoner shrubs of more lowly stature which may be removed as the choice plants develop.

Shrub Borders.—The many new shrubs which have been introduced in recent years have so widened our choice, that when making selections for limited spaces the difficulty more often arises in deciding which to leave out, rather than which to include. When planting shrub borders of moderate dimensions it is well not to select plants which grow very large and have a spreading habit, for although such plants may be kept within bounds by constant pruning, it usually means the sacrifice of their natural shape, and a shrub which loses this is shorn of half its beauty. A selection of choice shrubs of fairly compact growth might include: Eucryphia pinnatifolia, one of the finest of flowering shrubs, producing charming white flowers in abundance during August, and, later, giving autumnal colouring by its foliage; Dipelta floribunda, a shrub with graceful, pink flowers; Ceratostigma Willmottiana, a fine blue-flowered shrub, allied to Plumbago, but more hardy, and flowering abundantly from July to October; Osmanthus Delavayi, a graceful evergreen with fragrant white flowers in spring; the winter-flowering Viburnum fragrans, the fragrant V. Carlesii, Viburnum Davidii, a dwarf evergreen shrub having blue fruits, and V. rhytidophyllum, with creamy-white flowers followed by dark red berries. The two last should be planted in groups to ensure satisfactory fruiting. Viburnum tomentosum Mariesii has horizontal branches arranged in irregular tiers, and when these are covered with large, flat trusses of white flowers in June, it is a strikingly beautiful plant. Staphylea holocarpa produces charming, blush-pink flowers and is a first-class shrub, but still comparatively rare. Enkianthus campanulatus, E. cernuus, E. japonicus, Amelanchier vulgaris, Cornus florida rubra, Stachyurus praecox, Caryopteris mastacanthus, Hibiscus syriacus Coeleste, Euonymus latifolius planipes, E. alatus, Potentilla fruticosa Vilmoriniana, P. fruticosa Farreri, Exochorda macrantha, and Hydrangea arborescens, are other hardy shrubs, meritorious either for their flowering qualities or for their brilliant autumnal effect, and in some cases for both. The deciduous Chinese species of Berberis comprise fine plants for a mixed border of shrubs, but they are still more effective when grouped by themselves. These are a few only of the newer or lesser grown shrubs of moderate size; there are others of equal merit, and in addition the great families of Spiraea, Deutzia, Philadelphus, Weigela, Lilac, Prunus, Pyrus, Cerasus, Ceanothus and Cotoneaster, help to provide a wealth of material in sufficient variety to suit most positions and tastes.

FRUITS UNDER GLASS.

By T. Pateman, Gardener to Sir Charles Nall-Cain, Brocket Hall, Hertfordshire.

Early Peaches and Nectarines.—Where ripe Peaches and Nectarines are required about the middle of April, preparations for this early crop should be made forthwith. Trees grown in pots or tubs are to be recommended as these force more readily than those planted out in borders; the reason for this is fairly obvious; their roots are in warmer surroundings, and pot trees will produce ripe fruit quite ten days earlier than those planted out in borders and growing in the same house. The varieties best adapted for early forcing to furnish a succession are Duke of York, James Walker and Peregrine Peaches and Cardinal, Early Rivers or John Rivers Nectarines. The house should be cleansed thoroughly and the wall lime-washed. Before placing the trees indoors they should be washed carefully and have any unnecessary growth removed; if the trees were disbudded carefully during the growing season and the old fruiting wood removed after the fruits were gathered, they will require very little pruning now. They should, however, be examined carefully, for some strong growths may need to be cut out When each tree has been pruned and carefully washed, the requisite number may be taken indoors, but do not introduce more than can be given sufficient space, for crowded trees will not give good results. A mild bottom-heat is a great advantage, and if the trees are stood on inverted pots the fermenting material may be worked around the receptacles easily, but do not employ strong bottom-heat for this will tend to cause the sap to rise too quickly with a resultant loss of many buds through dropping.

Early Peach House.—Where trees are planted out and growing in borders, the work of pruning, etc., should be attended to at once. Remove all useless wood before unfastening the trees from the trellis, after which the shoots should be tied in bundles to give access to the roof for cleaning the glass and woodwork; or, if grown on a back wall, for limewashing the brickwork. If the trees are fairly clean very little work will be entailed, and if sprayed thoroughly with a winter wash that is all they will require. If, however, scale insects are present on the branches, another spraying may be necessary. In tying young trees in position, due allowance should be made for increase of growth, as the bark is often injured by tying the shoots too tightly.

PLANTS UNDER GLASS.

By John Coutts, Assistant Curator, Royal Botanic Gardens, Kew.

Hippeastrums.—Where it is desired to have these plants in flower early, a batch, according to requirements, should be placed in a warm house, plunging the pots to their rims in a bed of fibre or clean leaves. Bulbs required for flowering early should be selected from batches that were forced early last season, for having finished their growth soon they will be in good condition for early forcing. It is also an advantage to select plants that are in good condition at the roots and do not require repotting. The roots should be soaked with water, the drainage examined and made efficient if necessary. A portion of the surface soil should be removed and fresh compost substituted, consisting of good mellow loam mixed with a little leaf-mould and enough sand to render the texture open and porous; also add a five-inch potful of bone meal to every bushel of soil. The bulbs should be examined for mealy bug when they are being top-dressed. Very little water will be required at the roots until the plants have started to grow.

Winter-flowering Begonias.—These showy plants are making a fine display in the greenhouse. Watering should be done with great care in the case of plants that have been removed from the growing houses to furnish the conservatory or greenhouse, as in the cooler temperature of the show houses the plants will not dry out so quickly and be more susceptible to damping. The Gloire de Lorraine varieties are very accommodating, and in the neighbourhood of London and other large towns they suffer less from fogs than many other Begonias. The other winter-flowering section, as represented by such fine single varieties as Fascination, Optima, Mrs. Heal, Orange King and Exquisite are equally useful in being fairly resistant to fogs, but the double varieties are quite useless in this neighbourhood, as one night's fog causes every flower and bud to drop. In more favoured districts, where double varieties are a success, such fine sorts as Altrincham Pink (Fig. 183), Vulcan, Elatior and Duchess of Westminster are valuable for furnishing a wealth of colour in winter.

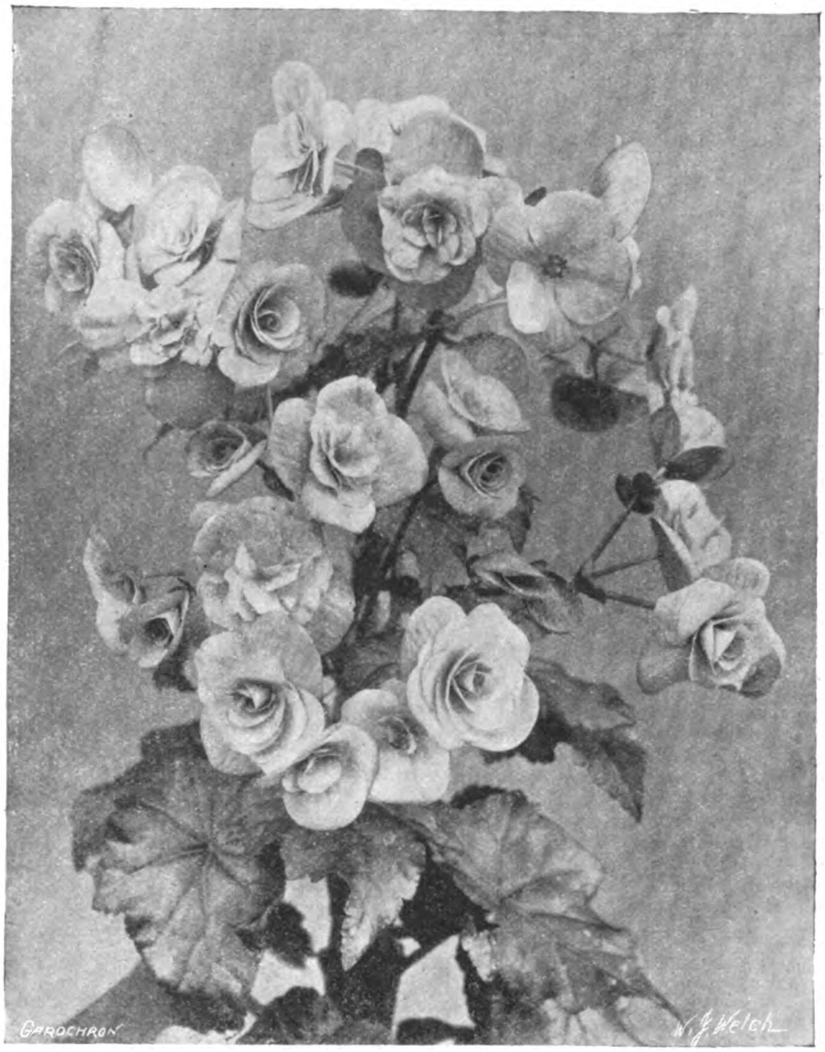


FIG. 183.—BEGONIA ALTRINCHAM PINK.

FOR NORTHERN GARDENERS.

By A. T. Harrison, Gardener to the Marquis of Ailsa, Culzean Castle, Maybole, Ayrshire.

Peach Houses.—The foliage of Peach and Nectarine trees has fallen, and the pruning and cleansing of the trees should be commenced. Cut out all weak and useless shoots, also any that have reached the limits of the trellis. If disbudding of the young shoots was systematically performed in the early part of the year, there should be plenty of young, vigorous growths to take the places of any that are now removed. The interior of the houses should then be thoroughly washed down with hot water to which has been added soft soap, and a small measure of paraffin. These cleansing ingredients are better mixed beforehand by beating up the soap with the paraffin into an emulsion, and adding enough of this mixture to make the water lather freely. When a section of the house has been washed it should be hosed down with clean water, using all the force available. The trees should also be carefully cleansed, using Gishurst Compound at the rate of a quarter-of-a-pound to each gallon of water. Dissolve the compound by bringing it to the boil and applying with a painter's brush when luke warm, working the brush into all forks and cavities where red-spider or other insects may have deposited their eggs. So soon as the trees have partially dried, refasten them to the trellis, and when this operation has been satisfactorily completed, the border should be also cleansed, removing a thin layer of the soil, and adding a top-dressing of well-rotted turf with which has been incorporated the desired fertilisers, making all firm. The hot-water pipes and wooden gangways should also be scrubbed, and where necessary the former should be painted with a mixture of lamp-black and linseed oil, after which the house will be ready for another season's cropping.

Rhubarb.—Where supplies of Rhubarb are in demand by Christmas, preparations should now be made for forcing. Sufficient crowns should be lifted and left exposed on the surface soil for a week or ten days before introducing them to the forcing house. If frosty weather should occur while the crowns are exposed, so much the better, as the crowns will respond to forcing after a touch of frost. To ensure regular supplies, sufficient crowns should be lifted at intervals, and, after exposing them to the weather for a time, placed in a dark, warm shed or building where they may be attended to conveniently, and not allowed to suffer for lack of moisture.

FLOWER GARDEN.

DIANTHUS WOLLEY DOD.

A remarkable feature about this fine old Dianthus is its constitutional vigour. But it is not only still a very hearty grower compared with most of the Pinks of long ago, the plants never seem to deteriorate with age. I have some in a mixed border and odd places which have never been interfered with for nearly ten years, yet they are as free in flowering and as healthy as ever they were.

This Dianthus has never set seeds with me, and it is by no means so easy to strike from cuttings as are most of its kind.

D. Wolley Dod is above the average size, making a broad, loose mat of blue-green foliage, above which the flower stems rise to one foot or more. The blooms are single and fringed; they open flatly to a width of nearly two inches, and are a uniform deep rose-pink. *J., N. Wales.*

CLEOME PUNGENS (SYN. SPINOSA)

A large bed planted with this uncommon subject during July produced a pleasing succession of blossoms until very late into October. The common name of Spider Flower is very appropriate, as the long pistil and stamens protrude prominently beyond the petals, the flower resembling somewhat the outline of a large spider. They are of an attractive soft rose colour, and show to greatest advantage during dull weather. The plant succeeds best in a semi-shaded position.

Seeds should be sown in heat during spring and the young plants either grown singly, or placed three in a five-inch pot in preparation for immediate effect. A succession of plants will be found very serviceable for use in filling gaps in the borders and for massing in beds. *H. G. K.*

HARDY FLOWER BORDER.

ACONITUM WILSONII AND CIMICIFUGA SIMPLEX.

During September and October, the bold, branching spikes of Aconitum Wilsonii, crowned with massive heads of helmet-shaped bluish-violet flowers and handsome foliage on stems from four feet to five feet tall, behind the fleecy white flower spikes of Cimicifuga simplex from two to three feet tall, made a delightful floral picture.

Both plants may be recommended for planting in bold masses for flowering during the autumn; they are perfectly hardy, and thrive in sunny or partially shaded borders, and in ordinary, well-tilled soil.

CLEMATIS INTEGRIFOLIA.

Clematis integrifolia is distinct from the climbing hybrids, and quite hardy. The plant is under two feet tall and produces stout, leafy stems and handsome, bell-shaped blue flowers in abundance. It is exceedingly attractive planted either in the herbaceous border or to cover boulders on the rookery, and is effective over a long period, first by the profusion of bloom, and finally by having an abundance of wool-like seed heads, which remain attractive until quite late in the autumn.

This plant is to be highly recommended for the rockery. *W. L.*

A FLOWERLESS SAGE.

Salvia officinalis is a variable plant in respect to the colours of the flowers, and the size and colour of the leaves. Nicholson, in his *Dictionary of Gardening*, mentions varieties with purple, blue, white and yellow flowers. Loudon discusses four varieties that were cultivated in his day for the use of their leaves, namely, the common or red, the green, the small-leaved green or Sage of Virtue, and the broad-leaved or balsamic. The red was probably the purple-leaved variety which one still sees, or hears of, in gardens.

I have a variety in the garden which has not flowered for the past ten years. This may or may not be the small-leaved green of Loudon, but the leaves of my plant are certainly not very green, though small-leaved. The upper surface is quite grey when the weather is dry, and the upper surface of the leaf-stalks is purple.

When allowed to grow for a number of years the plants form densely branching bushes, two to two-and-a-half feet high, without making any attempt to flower. This form may be more common than I imagine, but I have never had a flowerless one under my care until the one in question was planted. *J. F.*

WILD GARDEN.

ACTAEA SPICATA.

The Actaeas, or Baneberries, are attractive when they are in flower, and again when they produce their clusters of wax-like berries. Three forms of A. spicata are cultivated and all three have white flowers and finely-divided, attractive foliage. They differ, however, in the colour of their fruits.

The type, A. spicata, has clusters of shiny, black berries. A. s. rubra is perhaps the prettiest when in fruit, its berries being bright red. The white variety, A. s. alba, has wax-like, white berries.

These Actaeas are good subjects for planting in the wild garden or in large rock work, as they grow from two to three feet high. They may be grown in ordinary soil, and flourish quite well in shade. The attractive fruits are very poisonous and should not be accessible to children. *S.*

BULB GARDEN.

EUCOMIS PUNCTATA.

This beautiful South African bulbous plant is of striking and unusual appearance and a very useful border subject. Like many other South African bulbs it is not perfectly hardy under all conditions in this country, but in a warm, sunny position, preferably at the foot of a greenhouse wall it may be grown out-of-doors with success. It prefers a light, rich soil and perfect drainage is essential.

The bulbs are large and should be planted not less than six inches deep, and if planted in the open border without the protection of a wall a rough frame placed over them after the flowering period materially assists in the ripening of the bulbs. The broad, strap-like foliage is decorative all through the summer, and remains fresh until after the plants flower in August and September. The star-like flowers, arranged in a long, dense spike, are greenish in colour with purplish-brown in the centre, and powerfully fragrant, while at the top of the spike is a series of conspicuous, purple-edged, leafy bracts which give the inflorescence a distinctive appearance. Propagation may be effected by offsets from the parent bulbs. *A. P. C.*

XEROPHYLLUM ASPHODELOIDES.

This is a very beautiful plant which is not often found even in gardens possessing representative collections of the best hardy flowers.

It is between thirty and forty years since I first made its acquaintance in the garden of a wealthy amateur who was constantly on the look-out for good plants. I saw this plant for several years in succession, and, as the garden was north of the Tweed, it was deemed necessary to cover it with a hand-light in winter. According to some authorities it should not require this, but after it had been grown in this garden for some years it was left unprotected. The winter happened to be an exceptionally severe one, and, alas! the Xerophyllum succumbed, to the regret of all who had seen it.

It is a very striking and uncommon-looking plant, with tufts of grass-like foliage and spikes a foot or more in height, of lovely, ivory-like blooms. It is well worth some care at first, and it is better to pay a good price for a large plant than a small one for a little piece.

It grows well in rich but well-drained, sandy soil, and in sun or shade. It comes from North America.

CROCUS FLEISCHERI.

Many species of Crocus, as distinct from the glowing Golden Yellow and the "Dutch" varieties of C. vernus, are interesting and pretty. They are, perhaps, best suited to the rock garden, where they can have a place to themselves. Some of them, however, seed so freely that seedlings spring up here and there, and it is often well to leave them where they originate, as some beautiful effects are thus produced.

One of the spring-flowering Crocus species which may be planted now is Crocus Fleischeri, a native of Asia Minor. It has a charmingly reticulated corm and white flowers with a yellow throat, prettily striped with purple outside. The segments are pointed and the flower is quite distinct. The corms may be planted about an inch deep in light soil and in a sunny position. *S. Arnott.*

ALPINE GARDEN.

OXALIS LOBATA.

Oxalis lobata, the lobed Wood Sorrel, is over, and its yellow flowers will be missed, seeing that they were with us so late as the end of October. The chief value of this plant in the rock garden is in its late-flowering, for it comes into bloom in September and October, a time when alpine flowers are few.

This Oxalis has the peculiar habit of coming up in spring, then dying down and appearing again in autumn, when it flowers. It is only about an inch high and the blooms, which are small, are of a golden yellow. This is a scarce, though not rare plant in nurseries, and is best procured in a pot in spring. It loves a dry soil with ample drainage and full exposure to the sun. I have grown it well in a moraine of whinstone chips with old mortar and sand and a little soil, but with no water beneath.

Although of much less beauty and value than its allies, O. adenophylla and O. enneaphylla, O. lobata should not be forgotten or its beauty ignored.

PENTSTEMON DAVIDSONII.

Of the shrubby or half-shrubby Pentstemons few are more admired than P. Davidsonii, although in the eyes of some, P. Scouleri is more charming. On the other hand, P. Davidsonii has more brilliant beauty, seeing that its flowers are ruby-red. Some dubiety regarding the botanical name still appears to exist, and by some it is called P. rupicola, under which name it was figured in *The Botanical Magazine.*

It is a very dwarf sub-shrub, only two or three inches high. Its leaves are of a pleasing glaucous tint, while the flowers, which are produced in May and June, are, as I have stated, ruby-red and of a most impressive hue.

This beautiful little sub-shrub may be obtained in pots in spring and planted out on a sunny part of the rock garden, on the level or almost level parts. The soil may be composed of one part good loam, one of leaf-mould or peat, and another of sand and grit. This exquisite little plant is hardy, and may be propagated by cuttings or layers. *S. Arnott.*

DAPHNE CNEORUM.

Of the various Daphnes in cultivation the Garland Flower is the best, and perhaps the finest for the rock garden; certainly it is the easiest to keep in a thriving condition. The illustration (Fig. 187), depicts one of the clumps growing on the rock garden at Castleford, Chepstow, where it is a decided success and produces its myriads of flower heads annually. It is evergreen, of a spreading habit, and its slender branches attain a height of eight to twelve inches. It forms rosettes of small leaves, and the rich, rosy-pink, fragrant flowers are produced in dense clusters during April and May. The clump illustrated was a mass of bloom on April 23 last.

D. Cneorum is native of central and southern Europe, and is such a delightful evergreen shrub that it should be introduced to every rock garden, and although it may not be a success in every one, it should be tried for it is too choice a gem to miss. For no apparent reason certain plants will die suddenly, but I think the cause can be found in its free-flowering habit, which is followed by sheer exhaustion.

Some writers strongly advocate peat for this Daphne, but peat and sand alone is a starvation diet for this charming plant. A mixture of fibrous loam, sand, peat, and small limestones will suit it admirably, and where it is not in a thriving condition, I would add a liberal sprinkling of sweet leaf-mould.

There are many spots in the rock garden where D. Cneorum would be at home, especially on elevated positions among the rocks, where, perhaps, it gets a little shade during the middle of the day. This choice Daphne may be increased by layers and cuttings. The latter will form roots in sandy soil if placed in a cold frame during August. They should be potted singly the following spring or transferred to their permanent quarters, as Daphnes transplant rather badly. D. Cneorum is quite hardy. *T. W. Briscoe.*

RANUNCULUS LYALLII.

In May, 1921, some seeds of Ranunculus Lyallii reached me fresh from New Zealand and were at once sown in sandy peat, and the pan placed in an unheated house, where I grow Pyrola and other shade-loving plants. About a dozen seedlings, which seemed to make slow progress, were living at the end of 1922. In the following February these were potted in bog earth, Kent loam and granite chippings, and the pots plunged in sand under a north wall. Several of the stronger plants had made stout tap-roots five inches long in the seed-pan; others were but weakly rooted. Eight months later, in October, 1923, most of the plants looked well. As I found that several had pushed their roots through the drainage holes, they were shifted into larger pots filled with similar compost. The plants improved, and, in June, 1924, I measured several leaves six inches in diameter.

In February, 1925, eight or nine plants were put out in a bed made against the north wall of a greenhouse, with plenty of rough drainage, but in a compost in which, as before, a stiff loam was included, which I now know to have been a mistake. Last winter was cold and wet, and most of the plants, when examined this spring, showed signs of decay of the roots or collars. Several were dead, others, after drastic use of the knife, seem now to be recovering, in pots in a cold frame. One fine plant appeared quite unaffected, and, as its roots were firmly fixed in the drainage, it was left undisturbed. With the approach of warmer weather, this plant began to put out healthy leaves on long stalks, and is the plant which, three months later, flowered, and of which I send a photograph (Fig. 184).

When photographed on May 17, there were four expanded flowers and three buds. At this time the plant had made an offset, on a rhizome, bearing two leaves. This was followed later in the summer by another offset. As it seemed unwise to rely upon fertilisation by insects, the brush was used on three flowers, and about a dozen seeds were ripened, of which a few were sown in August. Except these three, no other flowers were pollenated.

The two finest flowers measured two-and-nine-sixteenths and two-and-eleven-sixteenths of an inch across, a good deal less than the reported diameters of flowers measured in New Zealand.

One wishes that this fine plant could be reckoned upon as a permanent occupant of our rock gardens, but it seems unlikely that we can ever completely meet its requirements here. Laing and Blackwell, in their *Plants of New Zealand*, state: "The Ranunculus (R. Lyallii) grows only in the alpine districts of the South Island, and at an altitude of 2,000 to 4,000 feet. It is cultivated with difficulty, as it requires the greatest amount of heat possible during the summer and the most severe cold in winter."

In a letter before me, the late Mr. R. Burton, who spent many years in New Zealand before he came to live at Longnor Hall, in Shropshire, in writing about these alpine plants considers "The difficulty is for us to realise the normal life of these plants, including the Ranunculaceae from high levels—say, six months of snow; and a month before, and one after, the six, in a state of melting and getting buried again; which gives them at best four months above ground, and these our November, December, January, February!"

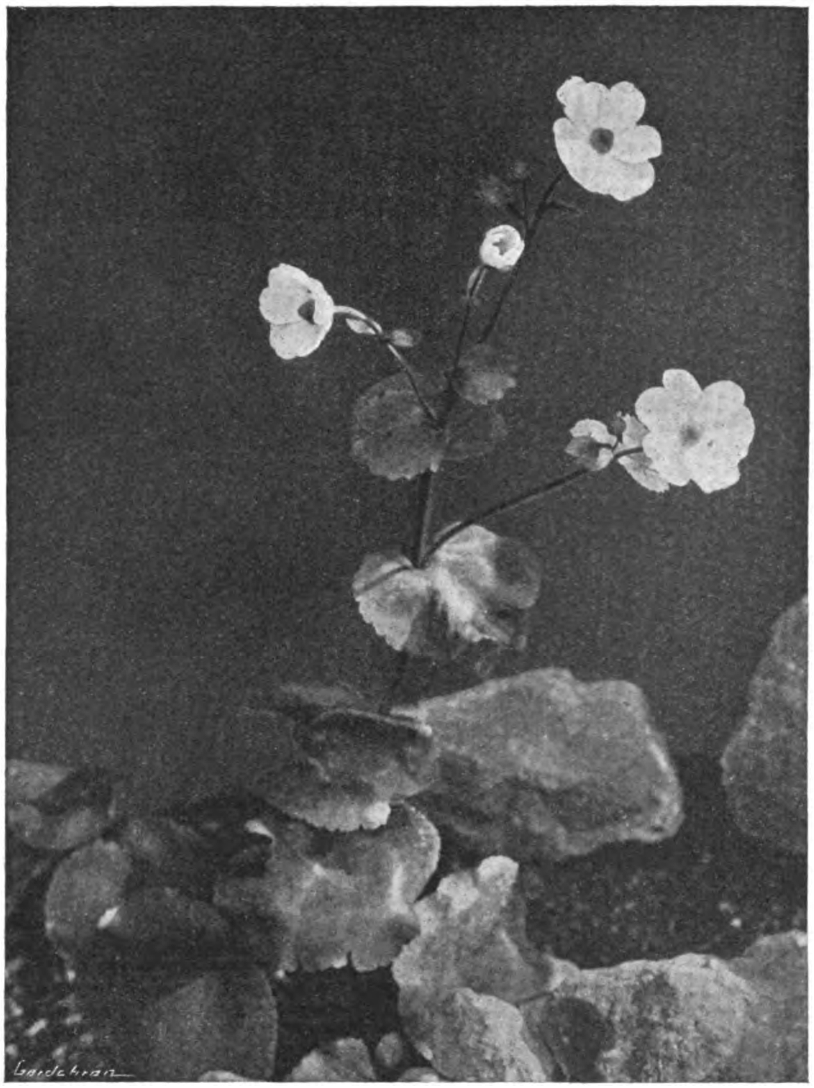


FIG. 184.—RANUNCULUS LYALLII.

I am fortunate in possessing a plant, which, so far, has adapted itself to our seasons. Mr. Burton, to whose kindness I owe the seeds from which my plants came, once had another of the fine Ranunculus family of New Zealand, R. insignis, from the North Island, which one year flowered in June, and another season in November, after which it immediately died!

The behaviour of antipodean plants, when cultivated here, is sometimes difficult to understand. Mr. Burton grew many of the terrestrial Orchids of New Zealand and often gave some to me. Both he and I, during several years, found that the fine Pterostylis australis, when flowering for the first time after being collected, chose a time suited to our seasons, namely, April. But another species, P. trullifolia, went on keeping to its old summer time and flowered in our mid-winter. In December, 1918, Mr. Burton told me that he had thirty plants of this species in flower at the same time. *W. H. St. Quintin, Scampston Hall, Maltara, Yorkshire.*

ORCHID NOTES AND GLEANINGS.

CYPRIPEDIUM NIVEUM AND ITS HYBRIDS.

Cypripediums are universal favourites for the production of flowers during the winter, but C. niveum produces its flowers at a different season, thereby maintaining the interest throughout the year.

This species was introduced by Messrs. J. Veitch and Sons in 1868, having received it as C. concolor, but when it flowered in the spring of 1869, they were agreeably surprised to find a new species. Not long after this first introduction it was received by other Orchid importers and soon became reasonably plentiful.

C. niveum is one of the most beautiful of Orchids, especially in its finest forms, and adapts itself to various forms of decoration as cut blooms, but is especially valuable for use as coat flowers and other purposes where flowers of a moderate size are appreciated.

It is found wild growing on limestone mountains, where it is not much exposed to the sun; often in the crevices of the sloping rocks, much as an alpine plant grows in its wild state. It has been imported from the Tambilan and Langkawi Islands.

In its natural habitat, the hottest months af the year are April and May, and the coolest December and January, when the temperature is often as low as 55°; the plants are at rest in the cool season, for the thick, leathery leaves are capable of withstanding dryness.

Cypripedium niveum requires a high temperature and a moist atmosphere whilst making its growth, with a liberal supply of water at the roots, but when at rest, cooler and drier conditions suffice. Many forms of compost have been recommended for this type of Cypripedium, but I still consider peat fibre and Sphagnum moss the best, especially if the pots are crocked with small pieces of limestone of a somewhat soft, porous nature, to which the roots will readily cling.

It is not advisable to raise the plants above the rim of the pots, and sufficient space should be allowed in the pots for watering.

When at rest, great care should be taken that the plants do not get too much water at the roots, as the latter are fleshy and soon decay; the same precaution must be taken against the other extreme. This Orchid was always considered to be somewhat difficult to cultivate, but if reasonable care is taken in the application of water to the roots at the different seasons, there is no reason why anyone should not succeed in growing it well.

Some fifty-five hybrids are recorded as being raised from this species, and the greater number are plants of easy growth. Amongst the best known hybrids are Snowdrift, Gravesiae, Tautzianum, Psyche, Graceae, Winnifred Hollington, Muriel Hollington, Snowflake, Aylingii, Lily Measures, Venus, Antigone, Jeanette, Purity, Vipanii, Angela, Armistice, The Pard, Olivia and the pure white C. Boltonii, which is now called a variety of Muriel Hollington. As regards colour, there is great variety and diversity; some forms are nearly pure white, with the exception of a few spots; others have a depth of colour not exceeded by any members of this interesting family.

Whilst not so robust as C. insigne these hybrids comprise a class of plants which should be grown in all collections of Orchids. *J. T. B.*

INDOOR PLANTS.

LUCULIA.

LUCULIA gratissima succeeds best when planted in a border in a cool greenhouse or conservatory, the soil best suited to its needs being equal parts peat and loam, rendered porous by a plentiful supply of sharp sand. It is well to restrict the rooting area, such restriction tending to limit gross, soft growth, which often develops at the expense of flowering.

The plants resent disturbance, and when established require only an occasional light top-dressing of peaty soil. The roots need copious supplies of water during the growing season, but very little during the winter. Hard pruning, in the case of old-established plants, may be resorted to advantageously.

Propagation is effected by imported seeds and cuttings; the latter is not always a satisfactory method, although a proportion of the cuttings should root under suitable conditions.

L. gratissima has fragrant, rose-coloured flowers in terminal and many-flowered cymes; the corolla is tubular. The leaves are elliptic, acuminate, the branches terete and pubescent, and may grow from six feet to twelve feet long. This species was introduced from the Temperate Himalayas in 1823, and is certainly one of the most beautiful of greenhouse evergreen shrubs.

L. Pinceana has white, fragrant flowers, somewhat larger than those of the foregoing species, and usually flowers somewhat earlier, May-September, whereas its congener flowers in late summer and autumn. The plant resembles L. gratissima in general habit, but has smaller and narrower leaves, which are quite glabrous and more coriaceous. L. Pinceana also displays a raised callus on each side of the sinus of the corolla lobes, this being absent in L. gratissima.

The cultural requirements are the same for both species, but L. Pinceana is more readily propagated from cuttings; it was introduced in 1843 from the Khasia Mountains. Both species are amenable to pot culture, but are very much more successful when planted out; but, however grown, careful watering is of great importance, for dryness at the roots is a frequent cause of bud-dropping. *Ralph E. Arnold.*

ROSE GARDEN.

POLYANTHA ROSES.

THE dwarf Polyantha Roses possess many good qualities that make them valuable as bedding plants. It is true they are somewhat lacking in the quality of fragrance which makes them less desirable than many of the Teas and Hybrid Teas; nevertheless, some of the more recently introduced varieties have some fragrance although it is chiefly restricted to those with light-coloured flowers. They are, however, free-flowering over a long season, have attractive foliage, are brilliant and varied in colour, and have that upright and compact habit so desirable in bedding plants; moreover, their comparative immunity from mildew and black spot is another great asset.

Varieties suitable for small beds are quite numerous, and amongst them may be mentioned Little Meg, a variety with pure white flowers of good substance which resist bad weather conditions well; Coral Cluster and Juliana, both of a delicate blush pink; Perle Orleanaise, soft creamy pink; Dorothy Dix, bright pink, rather large flowers; Ellen Poulsen, one of the best, with bright rose, fragrant flowers; Pink Delight, single, with brightly-coloured flowers of good size; Orleans Rose with large trusses of bright carmine flowers suffused with rose; Eblouissant, with pretty sprays of rich crimson flowers; Edith Cavell, an excellent variety of dark crimson colour but liable to burn in intense sunshine; and Triomphe Orleanaise, with large trusses of brilliant scarlet flowers. *A. P. C.*

NOISETTE ROSES.

THE following varieties of Noisette Roses are adaptable for covering walls with a south or south-west aspect, and all are showy. The original Noisette Rose is of American origin; its characteristic properties are blooming in clusters, free habit of growth of a climbing nature, and a rich perfume partaking of the fragrance of the Musk and Tea-scented Roses.

Several of the sorts raised have been crossed with Tea-scented varieties, and they are excellent for room decoration. Many of the varieties may be termed semi-hardy, they are, however, sufficiently hardy if protected by straw or rough litter from severe frost.

Maréchal Niel may be instanced as being one of the finest Noisette varieties grown. In pruning the vigorous growers, thin out the small and unripe wood and shorten the remaining shoots to about one-half their length.

Both Cloth of Gold and Maréchal Niel give an abundance of bloom; if treated as cool greenhouse subjects and all the growth possible encouraged to develop the first season, the plants will flower at an early stage. A mixture of well-rotted manure, fibrous loam, half-inch bones, a small quantity of basic slag, flowers of sulphur and fish guano, will furnish a compost very suitable for these beautiful Roses.

The rotted manure should be well incorporated in the second spit of soil, whilst the loam should be pulled to pieces, and not chopped, for I find after many years' experience, that this is the most successful method. Small pieces of charcoal, a sprinkling of flowers of sulphur and a small quantity of soot, bone meal and fish guano, will not only promote clean and healthy growth, but will also enhance the colour and cause the flower stalks to lengthen.

Fairly firm planting is advisable, as this is conducive to firm growth.

Solfatere is a superb Rose for growing on a south wall, the blooms being large and full, of a clear, sulphur colour, and the flowers are very useful for table decoration. It also makes a fine pot Rose trained as a climber. The foliage is very clean and the blossoms a clear tint. Cloth of Gold is a pure yellow Rose, producing very large and double blooms. This variety does well on a south wall, but it is advisable to cover the plant with a mat during severe weather in the winter and spring. Maréchal Niel is an old favourite, too well-known to require any description. In conversation some years ago with the late Mr. H. V. Machin, who was one of the most successful amateur Rose growers in his day, he told me the finest blooms of this variety he ever saw were staged by the late Mr. John Cranston, at a meeting of the N.R.S., many years since. They were grown in the old Rose house at what at that time was known as the Cranston's Rose Nurseries.

Celine Forestier is a well-formed and highly-fragrant Rose, an excellent climbing variety for a south wall or the cool greenhouse. The colour is deep canary yellow; the plant is free-flowering and the blooms are of a good size.

William Allen Richardson is a superb Rose of a tawny yellow colour and flourishes on an east or south-west wall. The blooms are rather subject to bleaching. Aimée Vibert is a pure white variety, blooming in large clusters, with pretty glossy foliage. This is a good Rose for a wall and one of the best white Roses for the greenhouse. Reve d'Or is an orange-yellow variety, producing flowers of moderate size and full petalled. It is a good climbing Rose and was introduced in 1869. Lamarque, sulphur-white, is a very large and full bloom and makes a fine wall variety. Whilst it is very useful for all-round purposes, Madame Caroline Küster, introduced in 1872, was a very fine acquisition to this group. It is free-flowering; the blooms are coloured canary-yellow in the centre, the outer petals being pale lemon. The flowers are large and globular; it is a very fine Rose and ideal for pot culture. Fellenberg is a beautiful crimson variety, producing its blooms in clusters; it makes a fine pillar Rose. *G. L.*

TREES AND SHRUBS.

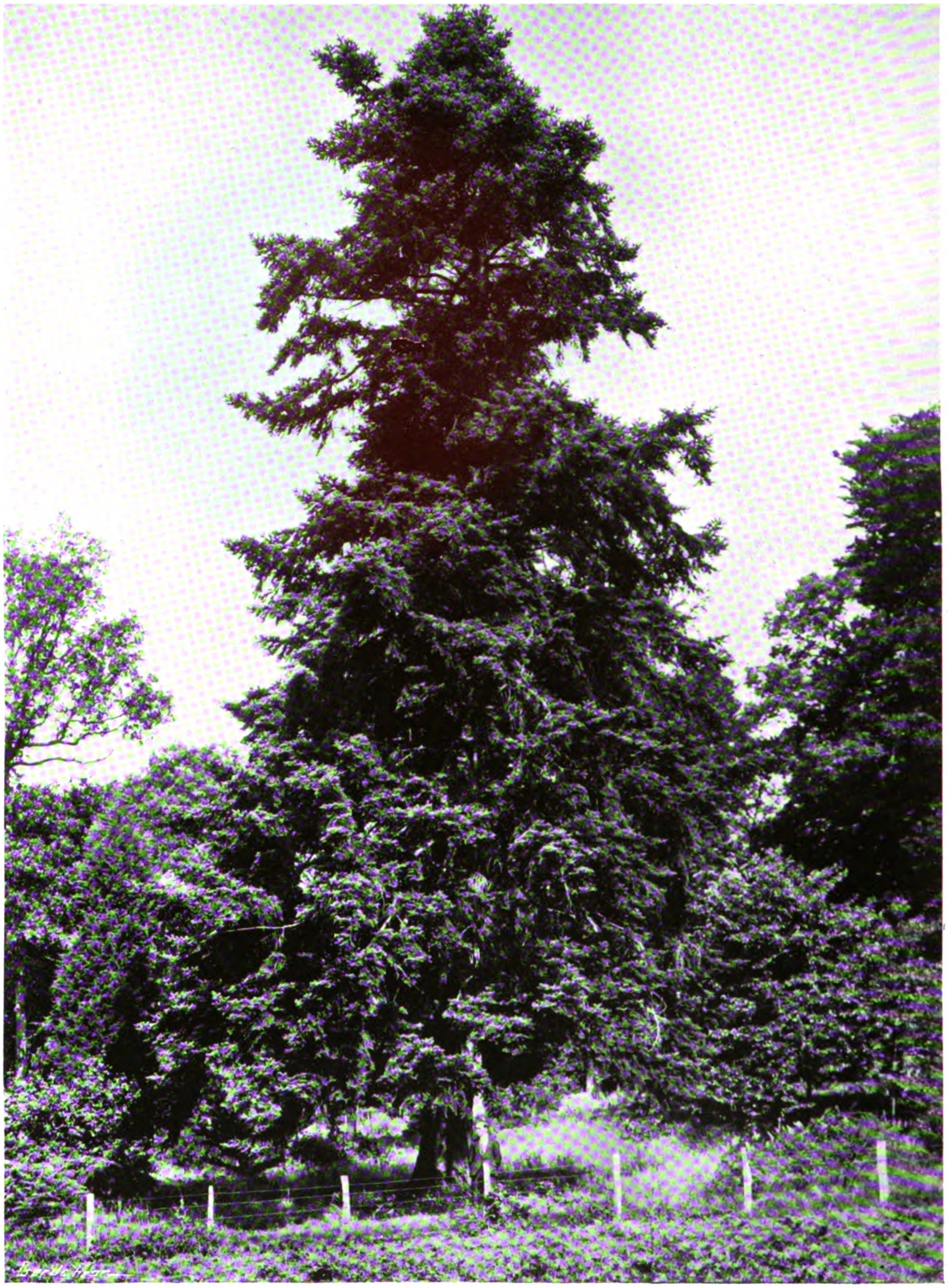
ABIES CEPHALONICA.

THE Supplementary Plate presented with the present issue represents a Cephalonian or Greek Fir (Abies cephalonica) growing at Stanage Park, Radnorshire, some 800 feet above sea-level. It was planted about the year 1845. There is another rather larger one growing in a group near by, which, however, defies photographers to make a representation of it. This was planted at a time and date when owners of country residences in this neighbourhood displayed more zeal as tree fanciers than did their successors in the later decades of the last century. I have noticed several examples of Abies cephalonica of about the same size and age as mine growing round about this country side. At Moccas (Sir Geoffry Cornewall), at Brampton Bryan (Mr. Ralph Harley), at Walcot (Lord Powis), and at Oakley Park (Lord Plymouth).

The particular tree depicted (photographed by Mr. Heyworth Knighton) measures eighty feet in height, ten feet three inches in girth at four feet from the ground. Though we read of specimens of more remarkable measurements than that in *The Trees of Great Britain* (Elwes and Henry), of one at Barton, Bury St. Edmunds, ninety-five feet high, and thirteen feet three inches girth; of another at Blount's Court, Oxfordshire, eighty-seven feet high and ten feet three inches girth; and of another eighty-two feet high, this particular tree, though perhaps not carrying off a winning number in its class, would certainly have been awarded a "Reserve" or "V.H.C." card in the competition had Mr. Elwes or Professor Henry chanced to visit us before they had completed their task of dealing with the Silver Firs.

Abies cephalonica, according to Loudon, was introduced into England in the year 1824, by Sir Charles Napier, K.C.B., of Peninsular, Corunna, and Hyderabad fame. Sir Charles Napier became Military Resident and Governor of the Island of Cephalonica. While there he evidently contrived to steal a few observant hours from his military duties in the pursuit of plant life. High up on the mountains, between some 4,000 feet or 5,000 feet altitude, upon Mount Enos, he came across the tree in quantities and sent seeds home. That was the story of its first appearance with us.

Supplement to the GARDENERS' CHRONICLE.



ABIES CEPHALONICA.

In its classification as a tree, it occupies a position in a little compressed group, only shared so far by one other, the tree known as the Spanish Fir (Abies Pinsapo), unless we include the rather *tertium quid*, a result of a cross between the two, and called Vilmorin's Fir. Both these trees, A. Cephalonica and A. Pinsapo, practise the rites of unorthodoxy in their observances of Silver Fir rules, with a defiance that almost asks for expulsion. Their leaves are radially, instead of pectinately arranged, and have spiny tips, shaped like a pen-nib, to say nothing of showing white stomata bands on both surfaces. It must have been a close thing once, I think, as to whether they should rank as Abies or Picea. However, their cones are erect and dehiscent, and the situation of their leaves is in accordance with the required traditions of the Silver Fir. When pulled off, they leave the tell-tale circular scar. These are the evidences that must have tipped the beam in favour of their retention among the Silver Firs.

So far then, they are a little exclusive group of their own, but there is another new Silver Fir from China, beginning to show eight feet to ten feet or more above ground, of most promising appearance, and possessing the same qualifications, that is, knocking for admittance at the door of their little coterie. When it has gained admittance it is going, if I mistake not, to cut out as a "good-looker" the old members of the group; this tree is named Abies recurvata (E. Wilson). *Charles Coltman Rogers, Stanage Park, Radnorshire.*

THE CULT OF THE FLOWERING CHERRY IN JAPAN.

Sad to relate, the cult of the flowering Cherry appears to be at a very low ebb in Japan. This does not mean that the tree is any less popular with the masses; the people still regard its blossoms as their national flower, and its opening as an excuse for a holiday, but it must be confessed that there are few who seem to care or know anything about the rarer varieties. A leading Japanese nurseryman told me that he very seldom received a request for a named sort, the order usually being for a "double" or "single" Cherry, without any specification as to its variety. Under these circumstances it is not surprising to find that only the strongest growers, or those most easily cultivated, are offered for sale. As a consequence of this indifference, many of the scarcer and more beautiful varieties are now on the verge of extinction. To my knowledge, two at least have already been lost to their native country. Happily I have been fortunate enough to rescue these two from oblivion, having discovered them growing unrecognised in the seclusion of a Sussex garden, where they had been imported from Japan more than twenty-five years ago.

During the Tokugawa Shogunate, Japan enjoyed, for two-and-half centuries, a period of almost uninterrupted peace and prosperity, and it was during this time that her horticulture and all her arts and crafts, were at their zenith. When this feudal system came to an end in 1858, and the barriers of her self-imposed isolation were broken down, Japan became so eager to overtake the Western nations in commerce and power that she could no longer afford any leisure for her peace-time occupations. The Cherries that the rival Daimyos had been at such pains to nurture were now neglected; the loving care and close observation that had evolved the several hundred varieties of these earlier days completely ceased with the commercialisation of the country and, one by one, as they died in the temple grounds, or castle precincts, they disappeared.

Were it not for one man of hallowed memory my story would be still more woeful. I have forgotten his name, but all those who can decipher the Japanese idiograph may read it for themselves on a granite tablet at Kohoku. He lived about forty-five years ago—a fond and passionate lover of the Cherry. On either side of the Arakawa way he planted his trees, and here most of them may be seen standing, old and decrepid, to this day. His enthusiasm apparently knew no bounds, and it is stated that whenever he learnt of a new or rare variety he would never rest until he obtained it. Even when jealously guarded by a tyrannical Daimyo, it seems he was undaunted, and, if needs must, would personally make a burglarious entry and steal some scions in the dead of night in order to add the coveted variety to his collection. A true collector and a plant-lover this—a man to whom every gardener owes a debt of gratitude.

If it had not been for this Arakawa avenue, the world would have been the poorer by more than a third of the best existing varieties. Mr. Ai Kawa Yo Ichi, of the Park Department of Tokyo, has recently been propagating from these unique specimens, so there is now hope that they have been permanently saved to beautify the gardens of future generations. And within the last few years a further step has been taken in the right direction. Thanks to the enterprise of Mr. A. Hayashi, a Cherry Society has lately been formed—the "Sakura-no-Kwai," of Tokyo—and its activities and publications are doing much to awaken a latent interest in the national tree, a tree that has for so many centuries been intimately associated with the poetry, literature and history of the country. Of all its members none has a greater love or knowledge of the flowering Cherry than Mr. Funatsu (see p. 402)—it would almost seem as though the mantle of the old Kohoku collector had fallen upon his shoulders. He dwells within a stone's throw of the famous avenue and takes an almost paternal interest in every tree. It is to him that we owe most of the Japanese names used by Professor Miyoshi in his magnificent monographs and in his own country he is the recognised authority on the subject.

It was on a bright and blustering day, towards the end of April, that I visited this courtly old gentleman in his home. He made me very welcome. The *shoji* were thrown back and the inevitable green Tea and Rice cakes were produced, while his unique collection of coloured drawings of Cherries was laid out before me. In these he had a faithful record of all the varieties he had known during his long years of devotion, exquisitely rendered in every detail and tone. With his long-nailed fingers he carefully pointed out all their characteristics—often little varietal differences that would have escaped the casual glance. Then lastly, as a sort of *finale*, he brought from his store-room of treasures a family heirloom in the shape of a *kakemono*, an old, hanging picture that had been painted by his great grandfather more than a hundred-and-thirty years before. This he slowly unrolled, handling it with that loving and elaborate care that seems to be the peculiarity of the oriental virtuoso. As the long narrow strip of painting was gradually unfurled before me, there emerged a very truthful representation of an exceptionally large, open-flowered, single Cherry, with its snow-white blossom surrounded by young foliage of a soft tawny or coppery hue. For a moment I almost held my breath; the likeness was unmistakable. "Please ask him what that is," I said to my interpreter. "Mr. Funatsu says that it is a Cherry that used to be cultivated in the Kioto district," came the answer; "For many years he has sought for it in vain; the variety has apparently been lost."

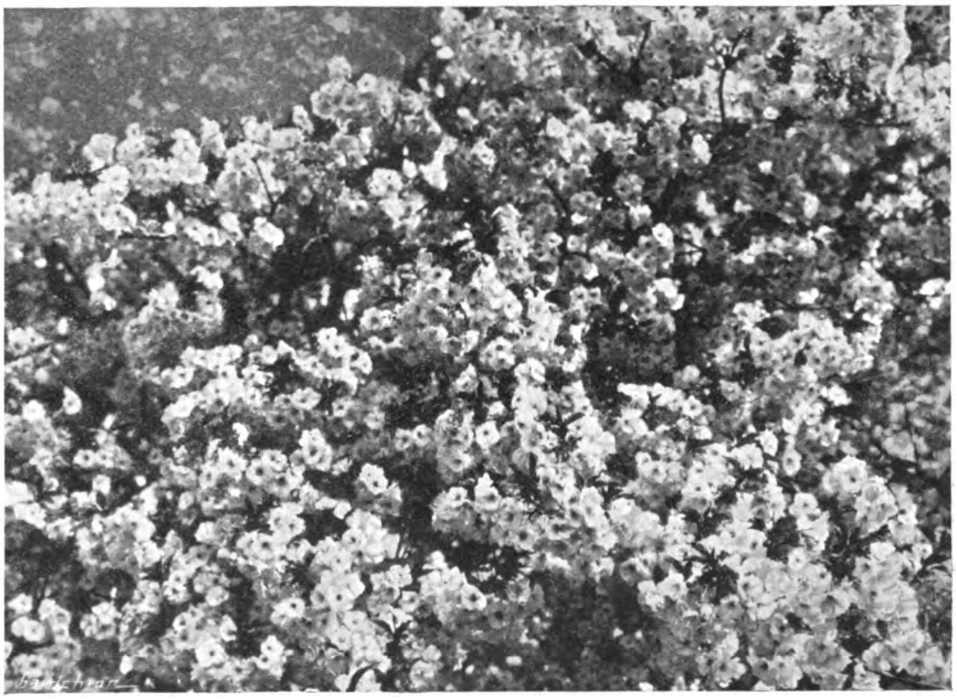


FIG. 185.—CHERRIES IN JAPAN: "THE EXQUISITE BEAUTY OF THE MASSED BLOSSOM."

As I gazed at the ancient *kakemono* my thoughts wandered away to a far distant Sussex garden. "Please be good enough to tell him," I said, after a pause, "that I have that Cherry growing in my garden in England."

The old gentleman was obviously incredulous, but was far too polite to express any doubt; he merely smiled and bowed in acknowledgment of the statement. One of these days I hope to convince him, and then his life-long search will be rewarded. Who can say that there is no romance in plant-collecting?

After the reception, Mr. Funatsu escorted us personally to the avenue, and with the pride of a fond parent pointed out the beauty and merits of each successive tree. The love-light in his eyes was a joy to behold. I have often seen women looking with the same expression at their babies—and ever and anon he would stop and gaze rapturously up into the boughs. Sometimes he would use a pair of binoculars and stand for minutes together, drinking in the exquisite beauty of the massed blossom (Fig. 185). I can see him now. As he stood there, the gusty wind thrashed the skirts of his dark blue *hoari* coat about his sandalled feet and tossed his white beard to and fro like a banner; and all the while the pink petals kept falling softly around him, in little whirling eddies, like a shower of summer snow. *Collingwood Ingram.*

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MR. F. KINGDON WARD'S NINTH EXPEDITION IN ASIA*

IV.—THE IRRAWADDY.

IN order to make it quite clear where we really are working this year, it will be convenient at this point to say something about the borderlands where the Irrawaddy rises, and about the river itself, so far as possible, in terms of familiar places. As Thoreau states in *The Lure of the River*: "Rivers must have been the guides which conducted the footsteps of the first travellers." And in order to reach our objective, we had to follow the Irrawaddy. What our objective was, I have hitherto only hinted at, not indeed from any ulterior motive, but simply because I was by no means sure that we should ever attain it; as, however, the goal is now in sight, metaphorically, though not actually—mist and rain preventing the latter—I need no longer make a secret of it.

Let us then start from Myitkyina, the northern terminus of the Burma railway, 720 miles from Rangoon (Fig. 186). The Irrawaddy at this point is 600 to 800 yards wide, about the same as it is at Mandalay, at least, in the dry weather. Indeed, between Myitkyina and Mandalay, it receives only one contribution of any size, the Shweli, and that is not a big river. Nevertheless, below Myitkyina a change does indeed come over the Irrawaddy, but only to squeeze it into the first defile, some seventy yards wide, and not a gorge only, because the cliffs are low and the break through short. At Bhamo the river widens out again to its normal breadth.

At Myitkyina then, the Irrawaddy, a thousand miles from the sea, is still a big navigable river, in appearance much the same as it is several hundred miles lower down; it is still the "constant lure to distant enterprise and adventure." Thirty miles above Myitkyina the great change takes place. At this point the river splits into two branches, the Mali Kha or western branch, and the Nmai Kha, or eastern branch, both flowing down from the north. At the meeting point there are rocks and rapids which baffle navigation; the Government river launches which go above Myitkyina stop just below the confluence. The Nmai Kha is a boisterous, unruly river, on the rough bosom of which no craft of any kind dare venture; but the more gentle Mali is navigable by country boat and raft for some distance, though only down stream to Myitkyina, where the rafts are broken up and sold. I once came down the Mali from Nsop in a native boat, shooting the rapids at the confluence and missing rocks by inches.

The Nmai rushes down from the north, parallel to and under the lee of the Salween divide, flowing in a deep, narrow valley which cannot quite claim to be a gorge. In a distance of eighty or ninety miles it receives four big tributaries on its east bank from the Salween divide, which range is really composed of a series of parallel ranges, cross-tied at intervals, owing to the original range having been split longitudinally by streams flowing parallel to the main river. These tributaries are, from south to north, the Ngawchang, Laking, Mekh and Ahkyang. The first- and last-named of these are more or less familiar to readers of *The Gardeners' Chronicle*; the Ngawchang because Farrer and Cox, in 1919, and myself in 1914 and 1919, collected in the Htawgaw Hills, and at Hpimaw and Imaw Bum; the Ahkyang, because it was here that Farrer collected and died in 1920.

There is a road from Myitkyina, fourteen marches up the Nmai Kha to the upper Ngawchang, where the frontier posts of Htawgaw and Hpimaw are placed, which comes to a dead end near the Chimili Pass into China; beyond that the going up the Nmai valley, from the Ngawchang to the Ahkyang is very difficult—I have only done it once. No one ever goes to the Ahkyang by this route.

The Mali Kha, which is considerably smaller than the Nmai, or rather has a much smaller discharge than the Nmai (not quite the same thing, for it looks quite as big to the eye; but being shallower and less swift, it discharges less water) likewise comes down from the north. The main road to the headwaters of the Irrawaddy follows the comparatively wide, flat valley of the Mali, keeping, however, to the hills on the western side till it reaches the broad plain of Hkamti Long, 214 miles from Myitkyina.

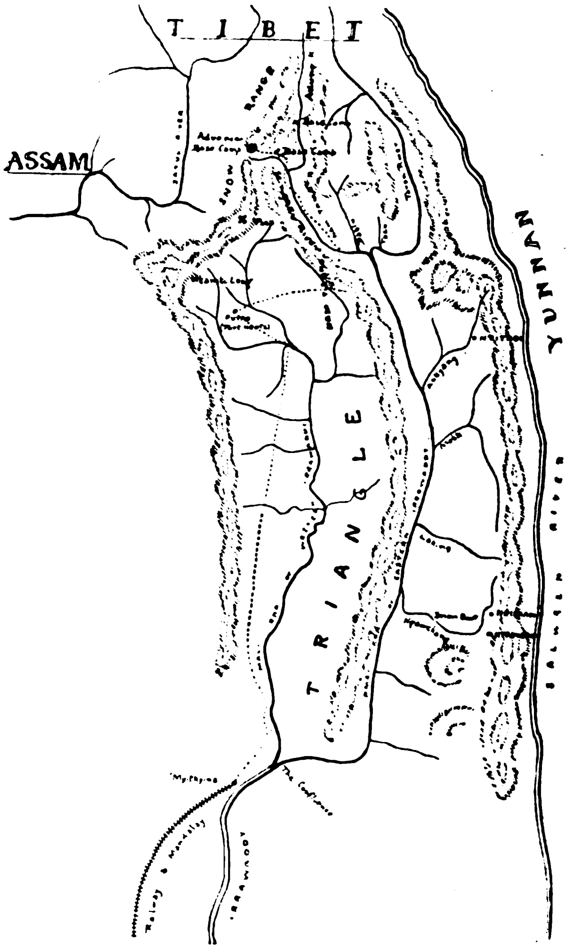

FIG. 186.—SKETCH MAP OF THE UPPER IRRAWADDY.

We can now pause to take a bird's eye view of the land (Fig. 186) with the two main branches of the Irrawaddy rushing pell-mell through the hills which rise on every hand, from the 14,000-foot peaks of the Chinese frontier east of the Nmai to the 10,000-foot peaks of the Mali along the Assam border; and the whole country is clothed with dense forest which clings to it and fits it like fur. Inhabiting this confusion of mountain and river, with its rain cloak of invisibility flung over it, are a number of tribes, speaking different languages, and eking out a precarious existence in the jungle. Their villages, perched on the shoulders of the great, rib-like spurs which buttress the main ranges, or tucked away in a fold in the hills, are few and far between; for the country can support but a meagre population. Kachin, Maru, Lisu, Nung—you meet them all, some living as high as corn will ripen, others preferring the hot, foetid valley with its loathsome miasmas, but all buried and hidden behind the overwhelming veil of forest.

Up the eastern river, a road which extends to fifty miles comes to a dead end against the China frontier. Up the western river, a road goes on and on for two hundred miles, as though it would penetrate to the very source of the Mali, but which in turn comes to a dead end in the plain of Hkamti Long; and between the two rivers is a tract of unadministered territory, called the 'Triangle,' whose apex is the confluence, and whose base is an air-line from west to east just south of the Hkamti plain.

Let us now follow the fate of these rivers still further north, that is to say, north of the

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* The previous articles of Mr. Kingdon Ward's Ninth Expedition in Asia were published in our issues of August 14, 28, and October 9, 1926.

Hkamti plain for the Mali, and north of the Ahkyang junction for the Nmai, since it is evident from the volume of water thundering along, particularly in the case of the latter, that we are still a good way from the source of the Irrawaddy.

So far as the Mali is concerned our task is easy, for this river rises in the mountains immediately to the north of the Hkamti plain, fifty miles distant. On a clear winter's day this range is well seen from the plain, the highest peak rising to 15,000 feet. It gives birth to four streams which together make up the Mali Kha—or Nam Kin, as it is called on the plain. However, there is no road to the sources of the Mali, though eight marches, mostly in the bed of the river, will bring you to the top of the divide, whence you drop down the western flank of the range into Assam. I did four stages in 1922, and then turned back.

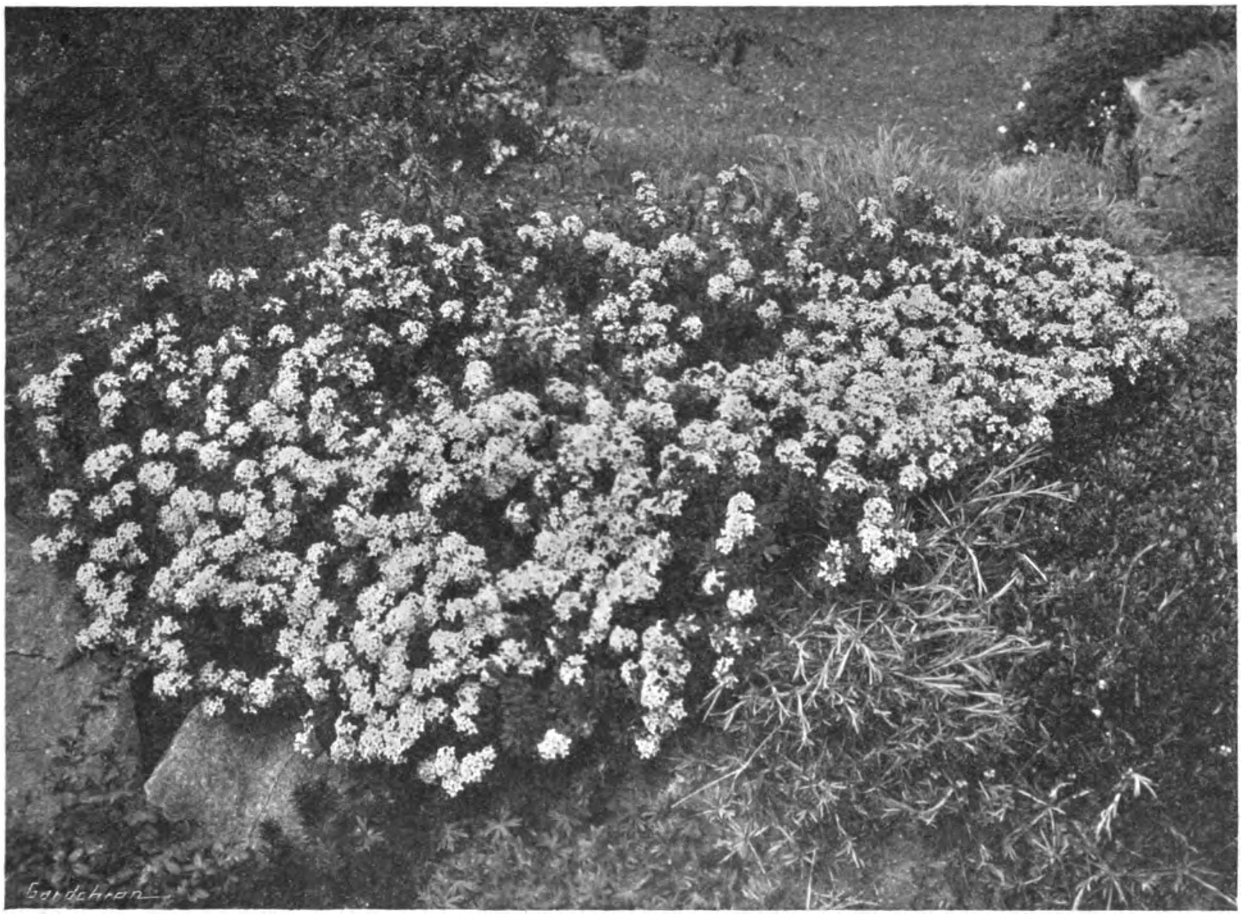


FIG. 187.—DAPHNE CNEORUM AT CASTLEFORD.
(see p. 406.)

The Nmai has a different story to tell, as befits the main stream. A little above the Ahkyang junction it is found flowing athwart the ranges, that is from east to west, but presently it resumes its old direction again, coming down from the north in swift strides. At the point where it takes this sudden turn to the east, which brings it right up against the China frontier, and nearer to the Salween than it has ever been before, it splits up into four considerable rivers, two big ones and two smaller ones. Of these, the Taron, in the extreme east, under the Salween divide, is the main river, while the Nam Tamai, little inferior to it, prolongs the Nmai Kha due north, or rather, north-west. All four flow down from the snow mountains to the north, but the two centre ones are quite short, rising from lateral spurs, while the two outside ones, the Taron on the east and the Tamai on the west, rise in the great Snow Range of the main divide, the same range, in fact, whence further south, the Mali rises.

From this it will be apparent that the Snow Range runs, not east and west across the headwaters of the southward-flowing Irrawaddy, as one might surmise, but more or less north and south. It is really a great projecting tongue of the Tibetan plateau, or perhaps part of the southern escarpment of the plateau, and is none other than the Irrawaddy-Brahmaputra divide. From its eastern flank it sheds the Taron and the Tamai which combine to form the eastern Irrawaddy, while from the lower spurs at its southern end it discharges the head streams of the Mali; from its western flank it sheds the Zayul river, which flows to the Brahmaputra in Assam.

The Taron actually rises on the plateau north of the snow peaks, and so, too, does the Tamai, though to a less extent; but that is neither here nor there. Naturally, as these streams divide and subdivide, the basin of the Irrawaddy grows ever broader, reaching its maximum breadth in the neighbourhood of the Hkamti plain, where it is over a hundred miles wide. It then contracts again and runs up in a wedge to the Tibetan frontier, in a bristling array of snow peaks.

We must now return once more to Fort Hertz and explain how these headwater streams of the Nmai may be reached; for as I have already pointed out, there is no road up the Nmai itself beyond Hpimaw. And, by the way, the word 'road' here does not mean a motor road; it means a 'dirt track,' more or less fit for mules, at least in the dry weather. The alternative to a road is a native path, along which laden coolies can travel, but which is apt to break the heart of a white man, if not his head. A jungle path goes straight ahead, up the valley or over the mountain, up and down over precipitous spurs, and breathless glens, ascending and descending cliffs by doubtful ladders, balancing faintly on ledges; you cross torrents hanging by a loop of cane from a rope of twisted Bamboo, praying the while that nothing will give way; you slash at creepers which have grown across your path, and are stung by giant Nettles; you wade through mud, and cling dizzily to some razor-edged cliff, and all the time leeches, blister flies and other abominations tease you.

Two roads go eastwards from Fort Hertz. One, bearing southwards, reaches the Nmai just above the Ahkyang junction, about nine marches distant; this was Farrer's route in 1920. The other, bearing northwards, reaches the Nam Tamai just above its junction with the Taron, and continues so far eastwards as the Taron bend, but does not go on up the Taron gorge into Tibet; it just comes to an end, beneath the frowning cliffs of the Salween divide. I struck the Taron end of this road in 1922, after scrambling for a week in the Taron gorge during my journey from China.

Another branch of this road is prolonged for a few marches up the Nam Tamai, north-westwards to the Seinghku-Adung junction, and this is my present route.

Thus, whether one wants to reach the Taron or the Tamai, one must first follow up the western branch of the Irrawaddy, and then cross the mountains to the eastern branch, at its point of disruption, rather than attempt to follow up the eastern branch itself. Anyone who has ever adopted the latter course once will be in no hurry to repeat the experiment. Of course, the easiest—though not the shortest—way to reach the upper Taron (but not the Tamai) is by Yunnan.

Our objective then is the Snow Range at the sources of the Nam Tamai, the Irrawaddy-Brahmaputra divide. The accompanying sketch map (Fig. 186) will give some idea of the local geography, and of our route. *F. Kingdon Ward.*

NOTES FROM A WELSH GARDEN.

The most severe October which any of us can remember in these parts cut short a great deal of the beauty of leaf and flower which we usually associate with autumn. When one sees the leaves of the common Ash, the Elm and some of the Sycamores falling while they are still quite green it is not difficult to realise the disastrous effect of the untimely frost on many garden shrubs and herbs. On the other hand, some subjects are the more brilliant for the wintry conditions, this being especially noticeable among the deciduous species of Berberis which were never more vivid in fruit and leaf colour. Of these I always think B. Wilsonae is still one of the most attractive, but it is difficult to make comparisons where so many are of so high a standard. A batch of mixed seedlings from B. dictophylla, B. aggregata, B. aristata and such hybrids as Fire-fly, make a blaze of colour sufficiently striking to satisfy anyone. B. pruinosa always marks a distinctive note with its pale yellow-green leaves and soft, dove-coloured fruits. B. Lycium is also a species of unique attraction, and there is much to be said for B. Hookeri (Wallichiana) as an all-the-year-round evergreen of very compact, dense and shapely habit, and of a height that does not exceed three to four feet in our soil.

The Cotoneasters, again, have been much improved by the autumnal frost, the leaf-colour of C. adpressa, C. horizontalis and C. Henryana being especially good. An unnamed Tibetan form of C. horizontalis, with flat, fan-shaped branches, is exceedingly fruitful and showy against a bank, and a particularly fine leaf-colour has been assumed by C. praecox. This last appears to be a robust form of C. adpressa. It is larger in all its parts than the latter, is not so prostrate, and it is one of the earliest to ripen its fruits, the very large crimson-scarlet berries often being coloured in August.

In an out-of-the-way corner under some Oaks, the Gladwin Iris (I. foetidissima) makes a remarkably bright bit of colour with its gaping capsules of orange-coloured seeds. Under similar conditions the graceful leaves of Solomon's Seal light up the shade with a yellow and pale radiance, but Kiringeshoma palmata, which is usually a very striking spectacle in the same colour, was reduced to a mass of black jelly by the first night's frost. Such Ferns as several species of Osmunda and the beautiful Onoclea sensibilis, which are wont to give such charming shades of fawn, buff and tawny brown, have met a similar fate.

Having the shelter of a wall, a young plant of Abutilon megapotamicum suffered little beyond the loss of a few leaves. It is now blooming as gaily as ever, the slender, elegant branches hung with the quaint yellow and crimson flowers. Though quite in the open, Grevillea sulphurea and G. rosmarinifolia, which began to flower in September, are now carrying a fair crop of their curious blossoms, yellow and rosy-red respectively. Some buds of the Kaffir Lily (Schizostylis coccinea) were hopelessly ruined by frost when just at their best, and Pontederia cordata, which also was still blooming freely, was cut down to the water level by the same cause.

Leptospermum pilosa is hardy enough here against a wall, but it is so late in the season before it produces its white, Daphne-like flowers that I doubt if it is worth a good place. The same must be written of Vitex Agnus-castus which, unless it gets an exceptionally fine autumn, with long periods of warm sunshine, fails to open its fragrant, pale violet flowers.

Vinca difformis always comes into bloom in October and continues during mild weather until spring. There is a singular charm about the frosty, blue-whiteness of its keenly-cut corollas, and I do not find it nearly so rampant as V. major, though it undoubtedly needs a watchful eye under very congenial conditions. It requires very little overhead shelter to preserve its flowers and tender shoots from frost, but cold, cutting winds cause injury to both.

Lithospermum rosmarinifolium broke into bloom several weeks ago, and this, again, is a winter-flowering subject, which is remarkably persistent, the beautiful blue flowers re-appearing in a few days after a frosty spell. Though easily grown in a poor, stony soil, with a few lumps of limestone at the roots, this very choice species seems to be uncommonly difficult to strike in the ordinary way. Though its flowers and tender tips may suffer as suggested—I have never lost a plant of this Lithospermum from frost, not even in such a trying ordeal as we had last winter.

In almost the same magnificent shade of bold, bright blue which distinguishes the winter-flowering Lithospermum referred to, Gentian sino-ornata has come through the frost and snow with but little injury. To-day (November 6) being warm and sunny, the beds are a mass of that wonderful colour. G. Farreri has not proved quite so robust, floriferous and enduring under identical conditions, but prehaps this is not to be wondered at, for while G. sino. ornata firmly roots every growth so soon as these are a few inches long, its pale blue ally relies almost entirely upon its base. Farrer's Gentian does, of course, root its growths after the manner of the other, but here, at any rate, it is much later in doing so, and the roots are comparatively weak. *A. T. Johnson, Ro-Wen, Conway, N. Wales.*

AUTUMN IN COVENT GARDEN.

The slack summer season of the market has ended and the period of active trade, which both grower and salesman have awaited with eagerness for many months, has arrived. Stands and stalls are now crowded with goods in all departments of the market, and each week will see more and more business, the culminating point of which will be Christmas week. The market flower-grower, like the wrecker who benefits by the winter storms, welcomed the early frosts which cleared gardens of flowers, and now the public is dependent on his resources for their supplies.

Chrysanthemums are the dominant subjects in the flower market; they are conspicuous everywhere; even on barrows and improvised stands in Wellington Street, Bedford Street and elsewhere in the vicinity. Yellow, white, bronze and pink are the colours most in demand, but there are varieties in red, crimson, purple and other shades. The disbudded flowers are known as "blooms," and the bunches of smaller flowers as "sprays"; the former include huge specimens of Japanese varieties worth up to 1s. or even 2s. 6d. each, down to the medium-sized flowers that sell wholesale from 3s. to 4s. a dozen. The sprays are very popular for vase decoration and the making of floral designs, enormous numbers of white sprays being used by florists as groundwork for wreaths.

The growing and selling of Chrysanthemums for market employs an enormous amount of labour, and as the Chrysanthemum is one of the few plants that can be grown in the open, lifted when in bud and planted out in glass-houses just before the advent of frost, it forms a profitable subject to follow a summer indoor crop, such as of Tomatos. Some of the early sorts are already over, but successional varieties will carry on the supply until the public tires of Chrysanthemums and turns to the Tulips, Daffodils and other flowers of spring.

Forced Roses and Carnations come next to Chrysanthemums in importance, and of the other flowers, the chief are Liliums and Richardias (Arums); these are mostly home-grown and from firms that specialise in their cultivation. With the enormous number of varieties of Roses, it is surprising how few are suited to the market trade, while of the numerous sorts of perpetual-flowering Carnations the choice is limited to comparatively few. This is because not all Roses will last fresh for a long time, or have long stems. Certain colours only are in demand, including white, pink, yellow and red, whilst the market has the biggest demand for white, scarlet, crimson, mauve, pink and yellow Carnations. In competition with the few kinds of home-grown flowers there are those from the south of France, for the French flower season of trade has already begun. The earliest Mimosa has arrived from the Riviera and forced Lilac from Holland is already available. The stands also contain Tuberoses, Ranunculus, pads of Violets, Marigolds, Gladioli, Paper White Narcissi, yellow Marguerites and Safrano and Ulrich Brunner Roses, but these two last are in no way comparable with those home-grown. These French flowers seem to improve as the weather becomes colder; at present some of them look very drab. Of much more use just now are the baskets of Solanum berries, Eucalyptus Globulus, Ruscus aculeatus, Myrtle, fruiting sprays of Arbutus Unedo, and Capsicums, all of which keep fresh much longer than the flowers. Parma Violets and Mimosa are probably the two most valued flowers from France just now, and as the season advances enormous quantities of both these subjects will find ready purchasers.

Whilst the French foliage of those subjects enumerated above is bought principally for associating with flowers in vases, there is a very large trade just now in some of our own hardy foliage and Ferns, principally as foundation work for floral designs. Common Laurel, fronds of the Male Fern, Sweet Chestnut, Camellia growths, Bay, Griselinia, various Pittosporums, Rosemary, Veronicas and Ivy are all utilised for this purpose, while from the countryside are brought sprays of Beech with autumn-tinted foliage, Box, Berberis, Ruscus, Holly and others. In some cases the foliage is dyed, as are the Teasel heads and Ruscus, but these make a sorry mess in wet weather when the aniline dyes get washed off them.

Such flowers of a permanent nature as Statice and Helichrysum are now in great demand, and of the former, huge cases are being received from the continent. For use in expensive floral designs and baskets there is a trade in Cypripediums, Codiaeum (Croton) leaves, Smilax and various species of Asparagus, known in Covent Garden as Asparagus Fern.

Pot plants include Ericas in variety, Chrysanthemums, Cyclamens, Begonias, Solanums, Hydrangeas and Lilium speciosum. Of these, most prominent just now are Ericas, in very small pots up to others in thirty-two-sized pots. It is remarkable how well-flowered these tiny Ericas are.

Christmas trees, as well as the Nuts, Oranges, Dates and other Christmas fare in the fruit section of the market, point unmistakably to the near approach of the market's biggest season of the whole year.

CABBAGE BUTTERFLIES.

In your issue of October 30, Sir Herbert Maxwell asks me for the evidence on which I based my assertion that Fabre is mistaken in his observations of the egg-laying habits of Apanteles glomeratus. I have much pleasure in complying with his request. I give herewith the names, with references, of a number of writers, some of them Fabre's own countrymen, whose work in each case disproves Fabre's observations:—Gautier, Cl., *Comptes Rend.*, LXXXI, 1918; Seurat, S. G., Contributions a l'etude des Hymenopteres entomophages, *Ann. Sci. Nat. Zool.*, X., 1899; Martelli, G. Contribuzioni alla biologia della Pieris brassicae (L.), e di alcuni suoi parassiti ed-iperparassiti, *Boll. Labor. Zool., Portici*, 1; J. Bronte Gatenby, *Journal Linn. Soc., Zoology*, Vol. XXXIII, No. 224, June, 1919; J. Bronte Gatenby, *Entom. Monthly Mag.*, Vol. V, 1919, pp. 19-26.

As Sir H. Maxwell quoted from Fabre's *Life of the Caterpillar*, perhaps I may be allowed a similar courtesy. With reference to the period of life at which the host caterpillar becomes infected, Gautier mentions Fabre's incorrect view that it is the eggs that are attacked by the parasite. Gautier performed the following experiment: Pieris eggs taken in the open and kept in gauze cages do not give rise to parasites. This contradicts Fabre. Caterpillars of Pieris ranging from twenty-four hours old to eight to nine millimetres in length, taken in the open and kept in gauze cages, are found to give rise to parasites. This means that the mother Apanteles is able to oviposit in Pieris caterpillars up to nine millimetres in length.

Seurat states that the caterpillars are about three millimetres long when attacked by Apanteles. J. B. Gatenby, *Ent. Mon. Mag.*, p. 19, states: "It (Apanteles) generally attacks young caterpillars of *Pieris brassicae* and lays inside their bodies some thirty to sixty eggs . . . The resulting larvae grow up eating the *fat-body* of the host in later stages of their life." I have emphasised the word fat-body as this further contradicts Fabre's statement that the "grubs live in the stomach and entrails of the caterpillar."

Finally, I give Martelli's description of the egg-laying of Apanteles as quoted by Gatenby . . . "The task of the Apanteles is as follows: It has got to lay from sixteen to thirty eggs inside the body of a very bristly caterpillar, at least its own size and often bigger. The caterpillar makes violent movements, signifying that it feels that 'there is something afoot.' The parasite then draws back and waits till the caterpillar's agitation passes off; the parasite then moves up again, and if it is successful, it approaches quite near, folds its antennae back over the dorsal region of its abdomen, curves the latter little by little between its legs after having raised itself on them. When the extremity of its body gently touches the lateral side of the victim's body, it suddenly darts its ovipositor into the latter and then clings on to the squirming caterpillar. The latter turns and twists, vainly trying to throw off its tormentor, the *Apanteles* hangs on suspended in the air by its front and middle pairs of legs. For ten minutes the parasite clings on, and during this time it lays in the haemocoel of the *Pieris* larva from sixteen to thirty eggs. It then leaves go and flies off."

I could give further proof of this matter were it necessary, but I think I have given enough to convince Sir H. Maxwell that my original statement that "the Apanteles lays its eggs in the Pieris caterpillar" was, after all, correct. In conclusion, may I say that I am second to none in my admiration of Fabre's work, and that it is unfair to accuse me of impugning his "personal honesty" merely because I do not find myself in agreement with him in this instance. If to make a *bona-fide* mistake is to be convicted of dishonesty, how many among us are honest men? *Kenneth M. Smith, The University, Manchester.*

PUBLIC PARKS AND GARDENS.

PECKHAM RYE PARK.

Peckham Rye has been a public open space and happy playground for generations, where, during holidays and fine week-ends, the area of sixty-four acres teems with care-free parents and rollicking children.

The sixty acres adjoining on the south side form Rye Park, this land having been acquired by the London County Council and other interested authorities, at a cost of £50,925, and was opened for the enjoyment of the public in 1894. The retention of a considerable area of its natural woodlands is appreciated by visitors who find pleasure and relaxation in this delightful spot.

The floral display of the beds and borders by the main gate is very effective in summer. The beds are arranged in a large, oval-shaped, grass area, and consist of three at each end, one in the centre, and two midway through towards the sides, a long border running to the right, and a short one on the left of the entrance. The planting of the first three beds during the past summer was as follows: small circular patches of pink fibrous Begonias, alternated with Verbena venosa, with dot plants of Helichrysum rupestris, Chanostoma hispidum and Centaurea candidissima; the bed behind contained pink tuberous Begonias, dot plants of Centaurea Clemente, and was edged with Koeniga maritima. Beds at the opposite end contained scarlet fibrous Begonias, Lobelia cardinalis and finely developed Kochias, with a ground and edging of blue Lobelia. The centre was filled with Cannas and other foliage plants, with a band of Iresine Madame Mullinson, and one of Gnaphalium microphyllum. Both beds in the side were furnished with dwarf and standard variegated Zonal Pelargoniums, one of Caroline Schmidt, with white Swainsonia, the other, pink-flowered Chelsea Gem and Plumbago capensis; a simple but very effective arrangement.

A striking combination of tall and dwarf Paul Crampel Pelargoniums, large plants of Abutilon Thompsonii, together with a broad belt of the dwarf Pyrethrum selaginoides, completed the short border, and the same arrangement was carried through about a third of the opposite border, to a point where it is carried back in a semi-circular design, the whole of which was filled with white flowering plants, such as Dahlias, Marguerites, Nicotiana affinis and Gladioli, interspersed with Veronica Andersonii variegata. The remaining portion was completed with panels of crimson Pentstemons, Antirrhinums, Dahlias and grey-foliage plants. This scheme was finely conceived and was the cause of much comment and well-merited admiration.

An extensive border of Michaelmas Daisies, interplanted with Delphiniums for early effect, proved of great value in brightening the shortening days of autumn. Considerable space was given to Dahlias, of which a representative collection was planted.

A broad avenue of Elms forms the main approach to the Arboretum, and the Sexby, or old English garden. This walk, in the spring of the year, when the big colonies of Crocuses are flowering, is very beautiful.

Specimens growing in the arboretum include: Arbutus Unedo, Betula alba, B. Maximowiczii, Cercis Siliquastrum, Populus alba var. fastigiata, Catalpa bignonioides, Quercus coccinea, Q. Ilex, Platanus acerifolia, Castanea sativa, Corylus Avellana var. purpurea, Amelanchier canadensis, Prunus cerasifera var. atropurpurea, Liriodendron Tulipifera, Liquidamber stryraciflua, Fagus sylvatica Fraxinus excelsior, and Laburnum Adamii, while the Coniferae is represented by Cephalotaxus Fortunei, Taxodium distichum and Pinus Laricio.

The old-English garden is named after Mr. Sexby, a former chief officer of the L.C.C. Parks, who expressed a desire that his name should be commemorated in this way. This garden is of oblong design; the crazy-paved central path, edged with Nepeta Mussinii, is covered by a pergola on which climbing Roses, Clematis, ornamental vines and variegated Ivies are trained. The lovely colouring of Vitis Coignetiae is effective at this season, and the Ivies, such as Hedera dentata variegata and H. maderiensis variegata, are admirable for effect during winter. The main pillars of the pergolas are neatly built of small, rough-edged squares of York stone; the intervening posts and connections are of stout wood with chain swings in the centre, where the path encircles a small pond and forms the chief point at which the intersecting pathways terminate. The pond is filled with the finer-growing Nymphaeas and contains a number of gold fish.

The beds and borders are always exceedingly attractive, prominence being given to Roses, Phloxes, Dahlias, Delphiniums, Michaelmas Daisies, general herbaceous plants and useful annuals, whilst specimen Fuchsias, Agapanthus and Hydrangeas provide additional attractions during the summer season. Occasional hedges of closely-clipped Yew adds variety, and use has been made of Lonicera nitida in forming small screens at the rear of the recesses provided for seats. Trees and shrubs growing here include a very fine plant of Forsythia suspensa, Spiraea prunifolia, fl. pl., the foliage of which is nicely coloured, Berberis Darwinii, Thuya orientalis, and the variety pendula; Juglans regia, and a quaint, dwarfed form of Ginkgo biloba. An inner boundary barrier is formed by light iron supports on which are trained such subjects as Roses, Wistarias and Forsythias; the outer by a neat hedge of Berberis Darwinii at the end, and Ribes sanguineum is used for the side. A line of tall standard Roses, together with large beds of Rhododendrons, Ericas and Azaleas, occupy the outskirts in one direction, and the woods provide shelter and setting in the other. Note was made of a good specimen of Clerodendron trichotomum, and thriving young plants of Griselinia littoralis, a charming evergreen rarely seen in the London area.

The Bamboo Garden is formed on undulating ground, delightfully situated and admirably screened by the woods and shrubberies on all sides. A stone bridge crosses the pool on the high ground, forming a commanding position from which a more beautiful and natural view would be difficult to obtain. Bambusa palmata has absolute control of the wide bank rising from the water level, having completely ousted the Rhododendrons originally planted there. A streamlet winds its way through the garden, providing accommodation for Funkias, Irises, etc. Three truly glorious groups of the magnificent Arundinaria fastuosa are to be seen here, the largest quite twelve feet through at the base, and attaining the fine height of fully twenty feet. Phyllostachys Henonis, and the very graceful P. violascens are each represented by specimens fifteen feet high. Other fine examples are: P. viridi-glaucescens, P. nigra and P. aurea. Arundinarias include the silver variegated A. Fortunei, the elegant A. nitida and the robust A. japonica. All the plants are perfectly healthy, and no loss of specimens has been experienced through flowering. Occasional groups of Gynerium argenteum, together with Eulalia zebrina, complete a picture of marvellous beauty and graceful loveliness.

The rock garden is well arranged, and suitably planted with Acer palmatum, small-growing Rhododendrons, Cistus landaniferus, C. Warley Rose, Veronica cupressoides, Senecio Grayii, Pernettya mucronata, several plants of Gaultheria procumbens, charmingly studded with showy fruits; Genista hispanica, Skimmia japonica, Helianthemums, dwarf Phloxes, types of Saxifraga, Antennaria tomentosa, Ceratostigma plumbaginioides, Primula rosea and striking patches of Verbena chamaedrifolia. A particularly fine planting of Berberis Wilsonae occupies the border behind.

The streamlet continues through the opposite side forming the water garden, which is planted with considerable effect. A shaded portion provides space for a large collection of named hardy Ferns, interplanted with variegated forms of tree-Ivies, continuing with fine thriving plants of Phormium tenax, Pernettya mucronata, patches of hardy Primulas, Caltha palustris fl. pl., Polygonum equisetiforme, long stretches of Saxifraga ligulata, the beautiful S. peltata, Arundinaria nitida, completed by two finely-developed specimens of Gynerium argenteum, and a large group of Arundinaria japonica in the grass on the rising bank at the end. An excellent method was noted in the treatment of members of the Willow family for ornamental effect, in and about the water garden. Types with attractively coloured bark, such as Salix vitellina, and S. v. britzensis are planted together and pruned hard each year, producing an abundance of light, dainty foliage in the summer, and a host of shoots, with charmingly tinted stems, for beauty and variety during winter.

Mr. Ashmore, the Superintendent, has earned the highest praise for the splendid condition of the park, and the gratitude and appreciation of a vast number of residents throughout south London. *H. G. King.*

The Parks Committee of Edinburgh proposes to lay out a new municipal eighteen-hole golf course on Saughton Mains Farm.

Mitcham Urban District Council has decided to proceed with the plans for the lay-out of a recreation ground in Devonshire Road, Colliers Wood.

A Committee, representing Richmond, Twickenham and other local authorities, has been formed to raise £10,000 to purchase Orleans riverside meadow and preserve its amenities. Lord Dysart has promised £500.

HOME CORRESPONDENCE.

Old Time Chrysanthemums.—In turning up some notes on the cultivation of Chrysanthemums, which I made in my apprenticeship days of over forty years ago, I found that in our collection of over five hundred plants in more than one hundred varieties, the following sorts were marked as good.—Japanese: Boule d'Or, golden yellow, medium height; Comte de Germiny, yellow, large bloom; Fair Maid of Guernsey, white, long florets, very tall; Meg Merrilies, sulphur-white, large; Val d'Andorre, bronzy, large; Thunberg, golden yellow, pointed florets, twisted. I thought, as a lad, the last was a queer-looking bloom. Of the incurved sorts, Lord Alcester, primrose-yellow, impressed me most, and as a white, Mrs. Heale was grand, as was also Mrs. J. Rundle. In fact, in my notes, I find I was partial to the incurved section, which I considered wanted more care in their cultivation than the large Japanese sorts. Of the reflexed section, I noted Boule de Neige, white; Chevalier Domage, yellow; Cullingfordi, scarlet-crimson; and Julia Lagravere, dark crimson, all very good. The Anemone section included, amongst others, Fleur de Marie, white; Gluck, golden-yellow; and King of Anemones, crimson. Nearly thirty years ago, I had in my charge, the following varieties, namely: Madame Carnot, average size of bloom ten inches in diameter and five inches deep; Marie Calvat, nine-and-a-half inches by seven inches; Viviand Morel, nine-and-a-half inches by six-and-a-half inches; Australie, nine inches by seven inches; T. Carington, nine inches by six inches; Mrs. White-Popham, six inches by eight inches; Commandant Blussett, six inches by six inches; Good Gracious, six inches by six inches; and so on. My friend, Mr. Cornelius Orchard, in his parody on the Chrysanthemum, "At Home," written in 1897, refers to the following sorts as being amongst the best at that time, namely: Queen of England, Modeste, Chas. H. Curtis, Mrs. Alpheus Hardy, Edwin Molyneux, Richard Dean, W. Tunnington, Lady Isabel, Julia Scaramanga, Emily Silsbury, Jubilee, Her Majesty, Madame Carnot, Mrs. W. Mease, Viviand Morel, Chas. Davis, Lady Hanham and J. W. Moorman. *S. H.*

——I am working in a garden at Dollis Hill, in which there is a quantity of Chrysanthemum James Salter, a variety that was in its prime nearly fifty years ago, yet it is still good. The plants are grown in the open, and many of the blooms measure five inches across this season, whilst the stems are seven feet tall. *H. E. Wootton.*

Two Crops of Plums (*see p.* 357).—The variety Victoria, producing a second crop during the past three seasons, has caused interest amongst many practical fruit growers. A small tree in my garden produced 6 lbs. of ripe fruits as a second crop this season, the Plums being nearly round, and similar in colour to Duc d'Orleans variety, with good flavour, but not sugary as those of the first crop. My explanation of this second crop is that the smaller shoots had their flow of sap arrested during a dry period, about the time the trees first came into bloom, the stronger receiving all the nourishment. At a later period the tree became better furnished with sap, enabling the dormant, weaker flower-buds to develop. The later and seemingly impoverished flowers had short, ragged-looking petals, and the stamens and stigma depressed, yet every flower that opened set a fruit. Another point of great interest is the absolute fertility of these blossoms, showing this variety to be self-fertile, there being no other variety of the Prunus family in flower at the time. Two seasons ago a large grower of Plums gathered over ten tons of second-crop fruits from a plantation of Victoria Plums. A dressing of farmyard manure was forked into the soil every season, after which a dressing of lime was applied. Silver leaf is unknown in this orchard, and every tree is in perfect health. Plums require liberal dressings of manure, also lime in some form, such as bone meal, basic slag or slaked lime. The worst attack of silver leaf I have ever seen was on trees which were impoverished. *Pomona.*

VEGETABLE GARDEN.

KOHL-RABI.

KOHL-RABI or, as it is sometimes called, Turnip Cabbage, is but little cultivated in gardens. Its disfavour with growers is no doubt due to them choosing or allowing the plants to grow too large. This vegetable is often grown as a substitute for Turnips; it withstands drought better than the Turnip, but prefers fairly rich ground. Seeds may be sown from March to early July, but sowings made during May and June will be early enough for ordinary purposes. Sow the seeds in a seed-bed and transplant the seedlings when they are large enough into rows eighteen inches to twenty inches apart, allowing twelve inches between the plants. Care must be taken not to plant too deeply. A much better plan, especially on hot soils, is to sow thinly where the plants are to grow, and thin the seedlings to the required distance apart. Very little further attention will be necessary beyond occasional hoeing of the ground. The plants should be large enough for use when they have attained the size of a cricket-ball, which should be in about ten to twelve weeks from the date of sowing.

In a trial of this vegetable at Wisley this year, a very good opportunity was afforded of comparing the various types, which included both white and purple forms.

Some varieties are large both in leaf and "bulb," and slow in growth; others are small, quick-maturing sorts, needing comparatively little space in which to grow, these being excellent for garden use, and in some particular cases were good examples of stock purity. Varieties intermediate between the two already mentioned were also represented.

The most useful for garden purposes are the small types represented by the varieties Early White Vienna and Early Purple Vienna. *J. Wilson, Wisley.*

CARE OF WINTER GREEN CROPS.

DAMAGE is done frequently to crops of green vegetables during a severe winter, and in view of hard weather occurring in the near future it is well to take precautions to mitigate the damage as much as possible.

Broccoli are usually the first to suffer, and these should now be laid with their heads to the north. Take a spit of soil out close to the stems on the north side of the plants, bend the latter over, and place the soil around the stem on the other side, making it firm. If very severe weather threatens, wrap some old hay or dried Bracken around the stem close up to the basal leaves, and they will have a better chance of coming through unharmed.

Keep the ground between the rows clean by forking it lightly, or use the hoe if the soil is friable.

Decaying leaves should be picked off and dug in ground that is being trenched.

Beds of spring Cabbage should be hoed occasionally, and if some of the soil is drawn up to the plants, it will serve to keep them steady and act as a protection. Any gaps in the rows should be made good with plants from the reserve bed, and a dusting of soot now and then will help to ward off slugs.

Globe Artichokes should also be protected against inclement weather. Clear away all dead foliage, place a good mound of small cinders around each plant, and, during severe weather some straw or Bracken also. These artichokes are always somewhat tender and should not be planted in an exposed part of the garden. If this cannot be obviated owing to position, it is wise to take off some of the side-growths with some roots attached, place them in eight-inch pots and winter them in a cold frame or house, where they may be kept moderately dry. Excessive damp will cause these plants to rot, and often do more damage than frost.

Breadths of Kales should have all decaying leaves picked off and plenty of soil drawn up to the roots and made firm. The Scotch varieties will often die off during the winter, and to prevent this they should be grown in a sheltered position. They do not appear to withstand sudden changes in the temperature so well as the Welsh and Labrador types. Any plants that have grown tall and are likely to be blown about by strong winds should be secured to stakes. Brussels Sprouts are amongst the hardiest of our winter greens, and these should be kept clean and have all dead leaves cleare away. Earth them up and keep the soil in the rows open on the surface; as most of the varieties grow rather tall, they should be staked and tied also, for not only will the appearance of the bed be improved but a far better yield of sprouts will be obtained. The tops may be used after all the Sprouts are removed, but these should not be taken off before the crop is gathered as they form a slight protection to the plants.

Christmas Drumhead Cabbage and the various Coleworts are valuable winter catch crops, and these should be treated as advised for spring Cabbages.

Autumn-sown Cauliflowers growing in frames should have the soil frequently stirred between them, and a little soot dusted around them. Remove the lights on all fine days and only cover the frame at night during severe frosts. This advice also applies to Lettuces wintering in frames which should not be kept closed for too long, or the plants will damp off wholesale. Those growing outside on south borders will come through the winter unharmed if they are kept clean and a little soil draw up to them. Autumn-sown Onions should be treated likewise, and if suitable varieties are grown, they will usually survive a severe winter. Round-seeded Peas and Broad Beans, if sown in sheltered positions in light soil, will take no harm if plenty of earth is drawn up around them, and the plants dusted occasionally with old soot. *R. W. Thatcher, Carlton Park Gardens, Market Harborough.*

AUTUMN BROCCOLI.

MEANS should be taken to protect the heads of these plants in case of sharp frosts. There are several methods of doing this, but the one I usually adopt, and which entails the smallest amount of labour, is to go over the beds at intervals and lift those plants that are forming heads, and heel them in on a sheltered border. In severe weather mats or strawy litter should be spread over the plants, removing the protecting material when the weather is favourable. *H. Markham.*

FRUIT GARDEN.

PEACH BORDERS.

PEACH and Nectarine trees that are unhealthy and need attention at the roots should be attended to now. If pressure of other work will not permit of making a new border, much may be done to improve the condition of the trees by renovating the border by removing a portion of the old soil. Dig a trench three feet from the stem of the tree, if it is a large one, and the same in width, cutting the roots off with the spade as the work proceeds until the trench is clear of all soil. If drainage material has been used, take it out, clean it, and add a little more if required, but before replacing the drainage, fork a few inches of old soil off the ball, to expose the roots, to enable them to be trimmed at the tips with a sharp knife. The ends of the roots may be laid into the new soil when filling in the border. After replacing the drainage it should be covered with newly-cut turves placed grass side downwards, and the trench filled with specially prepared soil, consisting of good fibrous loam, mortar rubble, wood ash, charcoal and fresh horse droppings, if obtainable, or half-decayed leaves. To every eight barrow-loads of loam add one of mortar rubble, one of wood ash and charcoal, and one of horse droppings or leaf-mould, with a good sprinkling of freshly-slaked lime and a liberal supply of bone-meal. Turn the heap over twice to mix the ingredients. If the loam is inclined to be heavy add a little more mortar rubble.

When putting the soil in the trench arrange it in layers, and well ram each layer to make the border very firm. The roots will ramify in the new soil and fresh ones form if this is done before the leaves drop. With this treatment the trees should carry a fair crop of fruits next season.

Top-dressing the borders is also of great assistance in improving the condition of the surface soil. Remove the old soil down to the roots with a fork, taking every possible care not to damage the roots, and after the sour soil has been taken away, apply a liberal amount of freshly-slaked lime all over the surface and fork it into the border before bringing in the new soil. The latter should be made very firm as the work is proceeded with.

All new soils should be got in readiness before uncovering the border. The loam will give the best results if cut and stacked in a dry place three or four months previous to using it. Dry loam is quite essential. After the work is completed, water the border sufficiently to cause the soil to settle firmly. *E. Neal, Tilgate Gardens, Crawley.*

FRUIT REGISTER.

PEAR VAN MONS LEON LECLERC.

This deliciously flavoured Pear is only really good when grown on a south or west wall. It is in season in November.

The fruits are large, pyriform (somewhat uneven), yellowish-green with russet; the flesh is white, melting and highly flavoured.

This variety succeeds on the Pear stock and should be grown wherever choice Pears are in demand.

PEAR PASSE COLMAR.

This is another excellent Pear, in season from November to December. It may be grown on a south or west wall or as a pyramid in the southern and western counties. The fruit is of medium size, short-pyriform, greenish-yellow with numerous small, russet dots and sometimes a slight flush.

The flesh is very juicy, melting and of fine flavour; the tree is a free and regular cropper and, in the west midlands, one of the most reliable Pears of its season. *Ralph E. Arnold.*

APPLES RAISED BY MR. CHARLES ROSS.

To the list given in your issue of November 5 should be added the Apple Gospatric, a variety which, though not quite fulfilling expectations, is still in existence in a few gardens. I have before me a letter written by Mr. Charles Ross from Welford Park, dated 16th February, 1885, which gives particulars of its origin.

"In April, 1875, several members of my employer's family sowed Apple pips in pots, and Gospatric was sown by A. H. Dunbar, Esq. (Mr. Eyre's son-in-law), oldest son of Sir Archibald Dunbar, of Duffus, near Elgin, N.B., and Gospatric is an old name in the Dunbar family. Gospatric Apple: Seedling from Golden Reinette, sown April, 1875; fruited, 1883, 9 fruits; fruited, 1884, 99 fruits."

Your readers may be interested to know that the original trees of Charles Ross, Rival, Hector Macdonald and The Houblon are still in existence at Welford Park. *Edward A. Bunyard, Maidstone.*

PLUM PRESIDENT.

This fine culinary Plum (Fig. 188) was raised by Mr. Thomas Rivers, who obtained the R.H.S. Award of Merit for the variety on October 15, 1895, and a First Class Certificate on October 9, 1900. The fruits are a deep purple colour with a very rich bloom, and they are in season in October, when most other varieties are over. The tree is a good cropper, and on that account and because of the late season of the fruits the variety is grown largely for market. The flesh is free of the stone, sweet and of excellent flavour. The broad suture, which shows well in the illustration, is characteristic of the variety. The tree makes compact, vigorous growth and does well as a standard. *The Plums of New York* records two other varieties of this name, both of American origin.

SOCIETIES.

BRIGHTON, HOVE, AND SUSSEX.

November 10, 11 and 12.—On these dates a most successful autumn show was held in Brighton, and although from the Chrysanthemnm enthusiasts' point of view it was not so fine as in some former years, it was as extensive and interesting as usual. The exhibits were arranged in the famous Dome and the adjoining Corn Exchange, and for the first time the Art Gallery was also utilised. The last is a well-lighted hall, and the bright colours of the pictures associated well with the floral designs and choice dessert fruits arranged on either side and down the centre.

Trade exhibits of considerable beauty and extent were displayed by Messrs. **Sutton and Sons** (vegetables), Messrs. **Keith Luxford and Co.**, Messrs. **Balchin**, Messrs. **J. Cheal and Sons**, Mr. **W. C. Bright**, **The Barnham Nurseries**, Mr. **Vinten**, **Chez Nous Nurseries**, **Premier Seed Co.**, Messrs. **Burfoot Bros.**, Messrs. **Reamsbottom**, Mr. **H. B. Pinney**, Messrs. **G. Miles and Son**, Mr. **R. Hibben**, and Mr. **Hemsley**, while Miss **W. Walker** exhibited flower paintings.

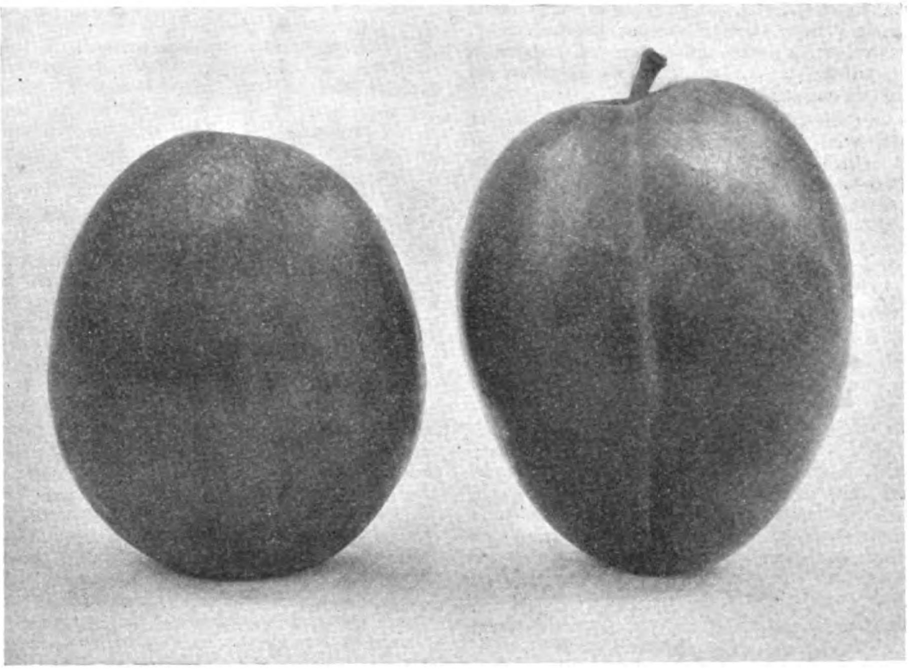


FIG. 188.—PLUM PRESIDENT.

The outstanding feature of the show was the magnificent grouping of decorative Chrysanthemums from the **Parks Department of the Borough of Brighton**, grown and skilfully arranged by the Parks Superintendent, Mr. H. B. **Maclaren**. It was a wonderful contribution and filled the whole of the space around and in front of the platform in the Dome. We add our congratulations to the many accorded Brighton and Mr. **Maclaren** for this splendid exhibit.

Groups.

Two exhibitors came forward in the principal groups class where an oval space, fifteen feet by nine feet, was allowed. One of the groups was arranged in the Corn Exchange and the other in the Art Gallery—a long way apart, which was unfortunate. The premier award, the Balchin Cup and a cash prize, was won by W. H. **Vokes**, Esq, (gr. Mr. W. Scott), Beechwood, Withdean, with a goodly display of well-grown material; second, Mr. H. **Greenfield**, Rutland Gardens, Hove.

Only two small groups of Chrysanthemums were arranged, a circular space of eight feet diameter being allowed. First prize was awarded to Mr. N. D. **Brooks**, Bletchington Road, Hove, and the second to Mr. **George Eade**, Rutland Road, Hove. Neither of the groups was up to the standard that used to prevail at Brighton.

Cut Blooms.

Mr. **Aplen**, Broadwater, Worthing, was the most successful exhibitor in the class for twenty-four Japanese blooms, in not fewer than eighteen varieties, three blooms in a vase. His best examples were of H. Wells, Ajax, Julia, Ida, Louisa Pockett, B. Carpenter, Victory, Majestic, R. C. Pulling, Mrs. J. Gibson and Queen Mary. **Viscount Cowdray** was the only other competitor, and was awarded the second prize. Mr. W. H. **Apted** was also first prize winner in the class for one vase of six Japanese blooms, showing splendid, clean specimens of Gilbert Drabble, R. Symonds, Queen Mary, Mr. J. Gibson, Majestic and William Rigby; second, Captain E. T. **Hodgson** (gr. Mr. G. E. Mockford), Barnfield, Cowfold; third, **Viscount Cowdray**.

Mr. **Apted** secured premier honours for twelve Japanese blooms, in four vases, and his varieties here were Julia, Majestic, Queen Mary, Ajax, J. Symonds and B. Carpenter; second, **Viscount Cowdray**. First prize for three vases of big Chrysanthemum blooms was also won by Mr. **Apted**, who staged good flowers of William Rigby, Louisa Pockett and Thomas W. Pockett, five blooms of each; second, **Viscount Cowdray**.

There were three entrants in the class for six vases of Single Chrysanthemums, and the chief award was made in favour of Mr. W. H. **Apted**, Broadwater, Worthing, for particularly good examples of Phyllis Cooper, Margaretta, Bronze Molly, Molly Godfrey, Catriona and Audrey; second, **Viscount Cowdray** (gr. Mr. R. Middleton), Paddockhurst, Worthing; third, W. S. **Poole**, Esq. (gr. Mr. G. Caswell), Oakwood, Haywards Heath. Mr. **Apted** had the best dozen single Chrysanthemums arranged in one vase, and his set was easily the best of five entries; second, Mr. W. R. **Paine**; third, W. S. **Poole**, Esq.

In the class for three vases of single varieties Mr. R. **Paine**, Henfield, led with good blooms of Annette, Laddie and Susan; second, W. J. **Yapp**, Esq. (gr. Mr. J. H. Manton), Beech Hurst, Haywards Heath; third, Captain E. T. **Hodgson**. The best four bunches of decorative Chrysanthemums were shown by Mr. **Apted**, whose varieties were In Memoriam, Romance, and Blanche de Poitou; second, **Viscount Cowdray**.

In the amateurs' section, Mr. C. **Lochin**, East Grinstead, had the best three vases of single Chrysanthemums, and Mr. G. **Funnell** led for a vase of twelve varieties.

Mrs. **Swann**, Haywards Heath, won premier position for a table decoration of Chrysanthemums, with Mrs. **Woolven** second. Mrs. **Swann** was also successful with a basket of Chrysanthemums and autumn foliage; while Miss A. **Cooper** had the best epergne of flowers and Mrs. **Swann** the second best.

Fruit.

First prize for a pair of bunches of white Grapes was won by Lt.-Col. P. R. **Papillon** (gr. Mr. E. Carpenter), Crowhurst Park, Battle, with good examples of Muscat of Alexandria; second, C. T. **Chandless**, Esq. (gr. Mr. F. W. Chilvers), Sherrington Court, Selmeston, Sussex. For two bunches of black Grapes, Messrs. **Douglas Bros.**, Durrington, led with a fine brace of Gros Colmar; second, C. T. **Chandless**, Esq.; third, Lt.-Col. **Papillon**.

A pretty class was the one for twelve Apples arranged in a basket, and here Mr. J. S. **Johnson**, Durrington Orchards, led with superb specimens of Lane's Prince Albert; second, Captain E. T. **Hodgson**, with large specimens of Sandringham; third, Mr. A. W. **Parsons**, Lewes, with Newton Wonder; six entries.

Mr. J. S. **Johnson** led for four dishes of dessert Apples with beautifully coloured fruits of Rival, Ellison's Orange, Cox's Orange Pippin and Worcester Pearmain; second, W. J. **Yapp**, Esq.; third, Mr. A. W. **Parsons**. The last-named led for four dishes of cooking Apples with fine specimens of Newton Wonder, Bramley's Seedling, Lord Derby and Gloria Mundi; second, Mr. J. S. **Johnson**; third, Captain **Hodgson**; seven entries.

Mr. A. V. **Cosham**, Grand Hotel Gardens, Eastbourne, had the best dish of cooking Pears—grand specimens of Catillac; second, Lt.-Col. **Papillon**, with the same variety; third, Mr. A. **Cooper**, Broadwater, with Uvedale's St. Germain.

Mr. J. S. **Johnson** had the best two dishes of dessert Apples—Ellison's Orange and Rival; second, Mr. **Cosham**. Mr. **Johnson** also led for two dishes of cooking Apples with Bramley's Seedling and Lane's Prince Albert; second, the **Earl of Chichester** (gr. Mr. A. Mason), Stanmer Park, Sussex; eight entrants.

Mr. **Cosham** was easily first for a pair of dishes of dessert Pears, with splendid examples of Doyenné du Comice and Pitmaston Duchess; second, Mr. E. E. **Miles**, Arundel Road; seven entries. For two dishes each of Apples and Pears the **Earl of Chichester** secured the premier award among four entries; while for three dishes each of Apples and Pears, Mr. **Cosham** was again to the front with a fine set, in which Charles Ross Apple and Pitmaston Duchess Pears were particularly good; second, Mr. A. W. **Parsons**. In the single dish class for Pears, Mr. **Dudeney** led with Pitmaston Duchess.

Vegetables.

Collections of vegetables were numerous and the specimens of excellent quality throughout. Miss **Cameron** (gr. Mr. G. S. Perkins), Downs Schools, Seaford, led in the class for six kinds, provided by Messrs. Sutton and Sons; second, Lady R. **Brand** (gr. Mr. F. Down), Little Dene, near Lewes.

Mr. W. **Sinfield**, Warleigh Road, Brighton, showed the best set of nine kinds of vegetables in a keen competition, where Mr. H. **Wheeler**, Princes Road, Brighton, won second place. Mr. R. W. **Wells**, Martin Street, Brighton; Mr. W. **Sinfield**, Mr. J. **Herriott**, Bedlam Street, Hurstpierpoint; and Captain **Almack** (gr. Mr. R. W. Wheare), Danny, Hurstpierpoint, were also successful in other classes for collections of vegetables.

Parsnips, Onions, Turnips, Leeks, Brussels Sprouts, Potatos, Cauliflowers, long Beet, Carrots and Celery, were all shown in grand condition, and the competition in the single dish classes was unusually keen.

SOCIETE NATIONALE D'HORTICULTURE DE FRANCE.

The Autumn Exhibition of the French National Horticultural Society was held from the 29th October to the 7th November at the usual place, Cours la Reine. The Society took advantage of a tent which had been erected there for a previous exhibition—the "Nautical Salon"—a very fine, large tent, but a little narrow for its length. However, M. Denis, the Society's architect, was able to make the very best of the accommodation, and the result was exceedingly decorative and pretty.

Fruits were numerous and varied.

The French President's Grand Prix d'Honneur was awarded to M. **Marcoz**, of Brunoy, for a very beautiful group of Orchids, which included such pretty subjects as Cattleya Austerlitz, pink with a labellum of a deeper shade; Brasso-Cattleya Mont Rose, with an enormous lilac flower, the labellum yellow in the centre, which won the Julien Potin Cup for the finest Orchid in the show; also a very beautiful series of Cattleya Fabia alba and C. amabilis alba, with the pretty contrasting white divisions and purple labellum.

Among other groups of Orchids, that of M. **Maron**, of Brunoy, was prominent, the fine collection also including Cattleyas and hybrids such as Brasso-Cattleya Miss Cavell (La Marne × Dianae), pink with a chamois-yellow centre; B.-C. Louis Ganne, pink, with red labellum; Cattleya Soleil d'Or, a hybrid of C. Triumphans, butter yellow, with a labellum of a deeper shade edged with violet.

The group of M. **Julien Potin**, of Neuilly sur Seine, included Laelio-Cattleya Auréole var. Renown, with deep yellow segments and red labellum; L.-C. Saint George, a very fine lilac; and L.-C. Lumineux × aurea, butter yellow with a lilac labellum.

M. **Perrin**, of Clamart, showed a fine Vanda caerulea; Cypripedium insigne var Sanderae, with a greenish "slipper," and upper division pure white; Laelio-Cattleya Carmencita, a deep yellow flower with a labellum striped with lilac; and Brasso-Cattleya Madame Ruffier, a very large, mauve-pink flower.

MM. **Vacherot et Lecoufle**, of Boissy St. Léger, showed Oncidium Boissyensis, a fine spray of large yellow flowers, and Laelio-Cattleya Barrès, with segments of the colour of wine-lees and a magenta labellum.

As is fitting at this time of year, Chrysanthemums were in the place of honour, and MM. **Vilmorin-Andrieux** had arranged (not for competition) a beautiful group with a hollow centre, occupying the central portion of the tent, formed in an original and artistic manner with plants in pots of varying heights, or specimens trained in pyramidal, cone, etc., shape, the colours well blended together. Among those in cone-shape were noted La Crau, a single, pure white variety; Favori, a single red; Rosine, single pink; and in specimen plants, Ville de Paris, red with bronze-yellow reverse; Blanche Poitevine, pure white—an excellent plant; Rufisque, bright pink, with golden centre; and Le Penthièvre, coppery red.

Madame **Veuve Martin**, of Champigny, also showed, not for competition, and her beautiful collection included several unnamed seedlings, besides Président Millerand, red with yellow reverse; Souvenir de M. Lhuile, butter-yellow, and many others.

From M. **Féron**, of Garches, came a magnificent exhibit, to which was awarded the second Grand Prix d'Honneur. The group comprised large flowers of Thomas Pockett, pink with silvered reverse; Ami Philippe Rivoire, an amaranth, incurved variety; J. Stredwick, salmon-pink; and a splendid sheaf of Mrs. R. C. Pulling, yellow.

M. **Lochot** sent from the nursery at Pierrefitte several beautiful unnamed seedlings, and also showed Ami Caulier, brownish-red; Rêve d'Automne, a pretty pinkish shade; and Président Fernand David, bright magenta.

From M. **Villette**, Vésinet, came a collection of very fine flowers, including Salonica, old rose with silvered reverse; Louisa Pockett, white; and Amateur Henry Emery, brownish-yellow, a very pleasing shade.

M. **Violette**, Saint Germain en Laye, showed the variety Daily Mail, the largest flower in the exhibition, of pale yellow hue, with fine florets; and Belle Hélène, pure white. M. G. **Truffaut**, Versailles, had a very interesting exhibit of popular varieties, such as Mrs. Pulling, yellow; Mrs. Gilbert Drabble, pure white; Miss Edith Cavell, orange-red with yellow reverse; and Captain Fox, carmine red. From the **Paris Municipal Horticultural College** at St. Mandé, there was a fine collection of Chrysanthemums surrounding an exhibit of vegetables, and a similar display was presented by the **College of Horticulture**, at Igny (Seine et Oise).

M. **Aubepart**, of Chaumont, showed the variety Président Cassez, with four sports from that variety in pink, red, and brownish-yellow tones.

Among exhibits of plants other than Chrysanthemums, there was a fine collection of Carnations from M. **Guillaume**, of Garcelles. M. **Lévêque**, of Ivry, showed similar flowers, including Mlle. Millerand, pure white; Monseigneur Baudrillard, slatish; and M. François Blot, striped with copper-colour. The usual fine exhibits of tuberous Begonias was shown by MM. **Vallerand Frères**, of Asnières; and by M. **Billard**, of Vésinet; Roses were well shown by M. **Defresne**, of Vitry, and by M. **Lévêque**, of Ivry; and there was a striking group of Cyclamens by M. **Kempnich**, of Woippy (Moselle).

M. **Laumonnier**, of the Maison Férard, had arranged a fine Japanese or Alpine scene as a frame to a display of diverse plants, including Primula Wanda, Nicotiana colossea variegata, Pernettya and Physalis in fruit, Cotoneasters, and dwarf Conifers.

M. **Thiébaut**, of Paris, showed an interesting collection of Cacti and other succulent plants at a young stage of growth, and M. **Weiss**, of Saint Cloud, had a pretty Japanese scene in excellent taste, with lovely specimens of weeping or dwarfed Conifers.

The florists' art was well represented by a fine exhibit from M. **Charlot**, a Paris florist, who showed a decorated table and also sheaves of Roses, Carnations, Chrysanthemums, Croton foliage, etc., with a foreground of Orchids (Vanda caerulea) and bunches of black Grapes.

M. **Baumann**, also a florist of Paris, had a very original and artistic exhibit. On a kind of funerary stele was arranged an immense bunch of Chrysanthemums, with bronze American Oak foliage; in the foreground, the finely divided, tender green foliage of Nephrolepis struck a pleasing note, and autumn leaves were scattered over the ground.

Fruits were shown by the firms usually responsible—MM. **Nomblot**, of Bourg la Reine; **Croux**, of Chatenay; **Moser**, of Versailles, etc. Besides the ordinary commercial varieties, there were goodly numbers of the rarer kinds, excellent specimens being shown of Pears Charles Ernest, Duchesse d'Angoulême, Beurré de Naghin de Tongres (or Beurré Durondeau), Souvenir de Jules Guindon, Beurré Dubuisson, Beurré d'Apremont, Monsallard, Rémy Chatenay, La Quintinye, Gilogil, Roosevelt and Van Marum; Apples Belle Dubois, Wealthy, Cramoisie de Gascogne (a nice red Apple), Belle de Boskoop, Rambour d'Amérique, Kandil Sinap (long-shaped fruits), etc.

Among exhibits of the more usual varieties, the very fine show made by the **Versailles College of Horticulture** must be mentioned, comprising enormous fruits of Pears Passe Crassane, Olivier de Serres, Catillac, Triomphe de Jodoigne, and Doyenné du Comice; and Apples Api Rose, Reinette du Canada and Calville.

The **College of Horticulture**, at Igny, had very fine specimens of Doyenné d'Hiver, Beurré Diel and Duchesse d'Angoulême Pears.

The students of the **Arboricultural Course** at the Luxembourg Gardens, Paris, staged a collective exhibit under the guidance of their professor, M. Cuny, which comprised, among other things Pears Doyenné du Comice and Belle Angevine, and Apples Reine des Reinettes, Reinette de Caux and Canada Grise.

M. **Gantillot**, Montreuil, showed enormous specimens of Apples, Canada and Calville, Pears Beurré de Naghin, Charles Ernest, and

Notaire Lepin, and some large Peaches of the variety Salway. M. **Dorangeon** had some good Pears (Curé), and some enormous specimens of President Roosevelt; while M. Bourassin showed Apples Api Rose and Grand Alexandre decorated with various designs.

Grapes were represented by a large display from M. **Salomon**, of Thoméry. Around a magnificent lot of Chasselas Doré were large bunches of Alicante, Diamond Jubilee, Muscat Cannon Hall and Muscat of Alexandria, besides the curious Kadin Barmak, with its long, white, pointed fruits.

As regards the exhibits of vegetables, mention may be made of the very important display made by the firm of **Vilmorin**, which was arranged with their usual taste and care. The background was decorated with Chrysanthemums, with porticos on which Tomatos were trained, painted the fashionable colour — "opera"; in front was a parterre composed of many different kinds of vegetables, groups of Cauliflowers and enormous Pumpkins and diamonds of Chicory and Scarole.

M. G. **Truffaut**, of Versailles, also staged a fine collection of vegetables, and so did the **Horticultural Colleges** of Igny and St. Mandé, while M. **Picard**, of Courville, had a very varied choice of ornamental Gourds. Fruit trees trained in various ways—palmettes, diamonds, vases, cylinders, etc., which are a speciality of many of the nurseries around Paris—were well shown by the usual firms, **Nomblot**, of Bourg la Reine, **Croux** of Chatenay, and **Moser**, of Versailles. Among the exhibits of ornamental trees and shrubs was an excellent display from M. **Thuilleaux**, of La Celle St. Cloud, comprising specimens of Sciadopitys verticillata, Juniperus Fletcheriana, Picea Parryana glauca, Prumnopitys elegans, Cedrus atlantica pendula, and Berberis Thunbergii atropurpurea, the last a novelty which has attained a certain fame, and of which the bronzy red foliage assumes its bright tints from the spring onwards. M. **Lecollier**, of La Celle St. Cloud, showed an interesting series of rare shrubs comprising Ilex Wilsonii, Lonicera yunnanensis, Callicarpa koreana, Viburnum utile, Indigofera Kirilowii and Osteomeles Schwerinae.

The exhibition was completed as usual by an important display of material and machinery for horticultural purposes; among other exhibits were a number of small garden ploughs, one of which was named "The Scarab." There were also a certain number of watering appliances, including one named "The Progress" which moves about automatically by the pressure of the water. Finally, a small salon contained paintings of flowers and of gardens, many of which were very pretty.

A number of Certificates of Merit were awarded for new Chrysanthemums by a special *ad hoc* Committee. Fifteen Certificates were gained by MM. **Vilmorin-Andrieux**, nine by M. **Morin**, of La Rochelle; five by M. **Leloup-Grimoux**, of Le Mans; and four by M. **Lochot**, of Pierrefitte. Ten of these Certificates were for market varieties, the number of Certificates given amounting to thirty-four, plainly too many. The following were among the best sorts noted: Champenois, brownish-yellow: Berrichon, yellow; Tourangeau, pink; Auvergnat, white; (MM. **Vilmorin-Andrieux**). Président François Blot, a pretty yellowish brown; Dr. Jules Debarré, striped yellow; and Commandeur Jules Ragot, red with flesh-coloured reverse (M. **Leloup-Grimoux**); Chrysanthémiste Lochot, pinkish white with fine florets, very handsome; Ville de Strasbourg, pink; and Reine des Marchés, pink (M. **Lochot**); and Eugène Fromentin, a fine yellowish pink (M. **Morin**).

Another new plant which should be noted is the very beautiful, deep red perpetual Carnation, Madame Raymond Poincaré, shown by M. E. **Guillaume**, of Sarcellés. *A. M.*

BUSHEY HORTICULTURAL.

The annual Chrysanthemum show of the above Society was held on the 10th inst., and was a great success. The entries showed an increase over those of last year and the quality of the exhibits generally was very good.

The David Blackley Challenge Cup, offered for the highest number of points in the Chrysanthemum classes, was won by Mr. W. F. **Whitehead**, and the Cup offered by Mrs. A. Collins for the highest number of points in the first division of the Schedule was awarded to **Lord Bethell**, while the Cup offered by Mrs. Norman Robinson, for the highest number of points in division "B," was also won by Mr. W. F. **Whitehead**.

Lord Bethell won all the first prizes in the section open to growers within a five-mile radius of Bushey, excelling in the classes for a group of Chrysanthemums, for twelve Japanese Chrysanthemums, twelve single Chrysanthemums, and six Incurved varieties respectively. Mrs. **Helen Nimmo** won two second prizes in this section. Mr. W. **Buckingham**, Mr. W. E. **Cheesman**, Mr. F. E. **Fisher** and Mr. **Norman Robinson** were the principal prize winners in the vegetable classes.

ROYAL HORTICULTURAL.

November 16.—The fortnightly meeting of the R.H.S. at Vincent Square, Westminster, on this date was especially noteworthy on account of the magnificent group of the **British Florists' Federation**, which, to all intents and purposes, filled the end of the hall. This not only illustrated the highest class of plants and flowers now obtainable in the market, but was a model of artistic and dignified arrangement. Unfortunately, as is usual at this season, the attendance was small. Chrysanthemums were freely shown by the various trade exhibitors, and there was an attractive display of winter-flowering Begonias. Orchids were rather more numerous than of late, and there were good exhibits of Apples and Pears. A number of paintings of garden scenes and flowers helped to fill the hall.

Orchid Committee.

Present: Sir Jeremiah Colman (in the chair), Mr. Gurney Wilson (Hon. Sec.), Mr. Fred J. Hanbury, Mr. H. T. Pitt, Mr. S. W. Flory, Mr. A. Dye, Mr. Charles H. Curtis, Mr. H. G. Alexander, Mr. Fred K. Sander, Mr. A. McBean, Mr. John C. Cowan, Mr. Henry J. Smith, Mr. Ernest R. Ashton, Mr. Richard G. Thwaites and Mr. J. Wilson Potter.

FIRST CLASS CERTIFICATE.

Laelio-Cattleya Aconagua (*L.-C. Schroderiana* × *C. Maggie Raphael alba*).—A bold and beautiful hybrid with broad, pure white sepals and petals, and a rounded lip that is lightly frilled at the margin, purple shading to mauve-purple, but ruby-red just in front of the yellow and yellow veined throat. Shown by **Baron Bruno Schroder** (gr. Mr. J. E. Shill), Dell Park, Egham.

Laelio-Cattleya Profusion var. Titanic (*L.-C. Serbia* × *C. Hardyana*).—A very handsome form of a handsome hybrid which has already given numerous varieties. The sepals and petals are very broad and mauve-coloured; the lip deep purple with yellow blotched throat. Shown by **Fred J. Hanbury**, Esq. (gr. Mr. Farnes), Brockhurst, East Grinstead.

AWARD OF MERIT.

Odontoglossum Frank Reader (*King Albert* × *General Foch*).—This was represented by a spike of fourteen shapely flowers of excellent substance. The colour is deep chocolate with mauve-pink margins and a white apex to the brownish-red lip. Shown by Messrs. **Armstrong and Brown**.

GROUPS.

Messrs. **Sanders** grouped Cymbidium Tracyanum, in fine condition, with a selection of Cypripediums and such interesting plants as Angraecum articulatum var. albanense, Dendrobium cymbidioides, Odontoglossum Wattianium, Oncidium bicallosum, Bulbophyllum elatior with small, greenish-white flowers; Eria longifera, which is practically perpetual-flowering but not attractive. Cypripedium Cappa magna, C. C. var. Miss Dorothy Sharpe (very fine), and the soft yellow Cattleya Prince John var. Charming were also included in this group.

Mr. **Harry Dixon** showed a small group of Cypripedium insigne Sanderae associated with Laelio-Cattleya Macqueda and Sophro-Cattleya Helen. Messrs. A. J. **Keeling and Son** showed Cypripedium Christopher var. Yellow Queen, Brasso-Cattleya Ilene var. Formosa, and the purple-flowered Odontoglossum Tigris.

Messrs. **Charlesworth and Co.** submitted Laelio-Cattleya St. George, Brasso-Cattleya British Queen, Miltonia Wm. Pitt, M. Beau Brummel, and the lovely gold and crimson Cattleya Sibyl, among other good things. Vanda luzonica var. Witleyensis, with three spikes of white and purple flowers was shown by J. J. **Joicey**, Esq. (gr. M. J. Mackay), The Hill, Witley. Cattleya aureata was very fine among the few plants exhibited by Messrs. J. and A. **McBean**.

Messrs. **Stuart Low and Co.**'s group contained Cymbidium Joan, Sophro-Laelia Leda, S.-C. Luminosa, Laelio-Cattleya Adela and the old Odontoglossum Uro-Skinneri. From Messrs. **Black and Flory** came capital examples of the attractive new Cattleya Princess Astrid (Alexandrae × Princess Royal); C. Molly (labiata × Tityus), and Laelio-Cattleya Imogene (L.-C. Britannia alba × C. Lueddemanniana), and Brasso-Cattleya Alderman, all very pleasing. Mr. G. **Alexander**, Westonbirt Gardens, showed Laelio-Cattleya Mrs. Chamberlain Chandler var. magnifica, with a spike of five large, mauve and ruby-purple flowers.

Mr. H. T. **Pitt** was awarded a Cultural Commendation for a large plant of Vanda luzonica, Rosslyn var., with two spikes of its white, purple-tipped flowers.

Floral Committee.

Present: Section A.—Mr. H. B. May (in the chair), Mr. J. F. McLeod, Mr. Arthur Turner, Mr. Mark Fenwick, Mr. H. J. Jones, Mr. William Howe, Mr. Donald Allan, Mr. J. M. Bridgeford, Mr. D. Ingamells, Mr. Montague C. Allwood, Mr. A. Vasey, Lady Beatrix Stanley, Mr. James B. Riding, Mr. W. B. Gingell, Mr. D. B. Crane, Mr. W. P. Thomson, Mrs. Helen Lindsay-Smith, Mr. Chas, E. Pearson and Mr. G. W. Leak.

Section B.—Mr. G. W. Loder (in the chair), Mr. W. J. Bean, Mr. E. A. Bowles, Mr. J. Reuthe, Mr. F. G. Preston, Mr. Reginald Cory, Mr. Clarence Elliott, Mr. E. H. Wilding, Mr. T. Hay. Mr. G. Yeld, Mr. W. G. Baker, Mr. L. R. Russell, Mr. R. C. Notcutt and Mr. Chas. T. Musgrave.

AWARDS OF MERIT.

Chrysanthemum Beatrice.—A Japanese variety of market type and similar in form to the variety Iolanthe, which received an award at the recent show of the National Chrysanthemum Society. The colour of the present variety is a pale lilac-blush. Shown by Mr. G. **Carpenter.**

C. Grenadier (see National Chrysanthemum Society awards, p. 418).—Shown by Mr. H. **Shoesmith**.

C. Hon. Margaret Smith.—A handsome Single of large size, with recurving tips to the florets, and of pretty pale terra-cotta colouring. Shown by **Viscount Hambledon**, Greenlands, Henley-on-Thames.

Chrysanthemum Lady Brunton.—See N.C.S. Awards, p. 419.

Chrysanthemum Rita.—See N.C.S. Awards p. 418.

Chrysanthemum W. Renshaw.—See N.C.S Awards, p. 419. These three varieties were shown by Messrs. **Keith Luxford and Co.**

Codiaeum (*Croton*) *H. G. Cooper.*—This is a handsome seedling which in the form of its leaves carries a certain indication of Codiaeum Disraeli as being one of its ancestors, but the two side lobes of C. Disraeli are almost entirely absent in this new variety. In the young leaves the central colour is yellow, and this becomes a semi-transparent reddish-orange as the leaves mature. The plants illustrated splendid culture. Shown by Messrs. **Cragg, Harrison and Cragg.**

Groups.

As we have indicated, the exhibit of exhibits in the hall was the superb contribution of the British Florists' Federation. This body is composed largely of growers and salesmen associated with the Covent Garden and chief provincial flower markets. As was set out on neat cards, the object of the exhibit was "to demonstrate the value of the best plants and flowers for decorative purposes." This the exhibit did admirably. The different plants and flowers were contributed by various members of the Federation, who are also known as the very best market growers. Wisely, the executive enlisted the services of one of its most skilled decorators to be responsible for the arrangement of the plants and flowers, and the result was a group of unrivalled artistic excellence. With consummate skill and unerring taste, this member of the Federation (Mr. H. Jolis) assembled the tall, stately Palms; graceful single-stemmed specimens of Grevillea robusta; Codiaeums (Crotons) of luxuriant growth and vivid colouring; Chrysanthemums, as growing plants in pots and as cut flowers of great excellence in large vases and jars, into a magnificent and memorable group such as rarely has been set before the public, and which received the unstinted admiration of even the most critical. The idea of "finishing off" the display with a bordering of perfectly-grown pots of a pale golden Selaginella—probably a form of S. Kraussiana—in front of the dainty little plants of Erica gracilis and its white variety, was a delightful inspiration. That this superb contribution would be awarded the R.H.S. Gold Medal was at once evident, and this award was made. But we would suggest that the occasion and such an exhibit warrants even more. Unfortunately, the graceful custom which obtains on the Continent of offering also the "felicitations" of the "Juré," does not obtain in our country. But we suggest that such a custom is, in special cases, good and laudable and worthy of adoption.

Chrysanthemums were chief amongst the general floral features of the meeting. Mr. H. J. Jones filled a large wall-space with a great variety of well-grown blooms. On the present occasion he adopted a new style of arrangement which gave ample space to the many vases. His specimen exhibition blooms included excellent examples of Mrs. A. Holden, Mrs. R. C. Pulling, William Rigby, General Petain, Mrs. George Monro, junr., Mrs. J. S. Kelly, Mrs. L. Barton and Mrs. F. Attwood. There were also admirable selections of Singles and Pompons.

Just inside the doors, Mr. A. G. Vinten had an admirable collection of medium-sized Japanese and single varieties. The former included Mrs. R. F. Felton, Golden Marvel, Mrs. S. Dove, Queen of Pinks and Clio; while chief amongst the singles were Exmouth Pink, Molly Godfrey, Bridgwater, Absolute, Susan and Mrs. W. E. Catlow.

An exceedingly interesting collection of Chrysanthemums was also displayed by Messrs. Keith Luxford and Co. This included some superb exhibition Japanese varieties, such as Belle Chinoise, of rich golden-yellow colouring; Lady G. Miller, of paler yellow and Thos. W. Pockett, a very large, silvery-pink bloom. Their singles were particularly well-grown, and of these we selected Jessie McNab, yellow; Mr. Low Thomson, primrose; and Sheila, crimson, as being typical varieties. A large vase of mixed Anemone-centred varieties included several very desirable flowers.

Messrs. Cragg, Harrison and Cragg set up, with great taste, a considerable selection of their useful varieties. The pretty little Fifi, which recently received the National Chrysanthemum Society's Certificate, was given the central position, where it gained fresh admirers. Iolanthe, another new variety, Comus, a medium-sized Japanese of yellow colour, and the companion white Lynette, were also well shown. Two large vases of Anemone-centred singles well illustrated their decorative value. These were Heloise, a delicate salmon-pink, and Tara, of a darker tone.

Near the British Florists' Federation's exhibit, Messrs. Stuart Low and Co. set up a number of pot plants of their new Chrysanthemum which is appropriately named Fragrance. It is a single, yellow variety, growing to a height of three to four feet, and producing quantities of graceful sprays of flowers which have a delightful perfume suggestive of well-saved hay lightly sprinkled with essence of Almond.

A small collection of Chrysanthemums staged by Messrs. Barham and Wood included Louisa Pockett, Edith Cavell, Yellow Cavell and several good Singles.

Carnations were shown by Messrs. Stuart Low and Co., who had vivid vases of Ruby Glow, Philip Sassoon, Topsy and Betty Low; by Messrs. Allwood Bros., who staged Shot Silk, Wivelsfield Copper, Laddie, Spectrum and several vases of Dianthus Allwoodii; and by Mr. C. Engelmann, who had good vases of Rouge, Brenda, Sheila Greer and Spectrum.

A central table space was very atractively filled by Messrs. John Peed and Son with exceedingly good winter-flowering Begonias, interspersed with Palms and Codiaeums. The Begonias included Fascination, Exquisite, Optima, Emita, Mrs. Petersen and Gloire de Lorraine.

On a large floor space, Mr. G. Reuthe displayed an interesting collection of Conifers with an occasional plant of a Nerine in flower. Amongst the Conifers were plants of Dacrydium, Widdringtonia and other tender genera. The hardier sorts included Abies Webbiana, A. firma, A. brachyphylla and Pinus muricata, bearing characteristic cones, and there were also cones of Pinus ponderosa, Abies Pindrow and A. Nordmanniana.

A valuable selection of Conifers suitable for the rock garden was set out by Mr. G. G. Whitelegg. These were very shapely little specimens, and such as Thuya elegantissima and Toccidentalis var. Rheingold bore attractive bronzy-yellow colourings. Mr. Kleinkert had topiary specimens, chiefly in Box.

On the staging, Messrs. L. R. Russell, Ltd., staged berried shrubs, which included good specimens of Skimmia japonica, Pernettya mucronata and Myrtus Ugni, with Berberis Darwinii showing bright autumn colour. Mr. H. Hemsley staged Arbutus, Berberises, shrubby Veronicas, dwarf Junipers and a few alpines.

Mr. W. Wells, junr., had several vases of the new Gypsophila Bristol Fairy bearing spreading panicles of large white flowers. Mr. J. J. Kettle had vases of Violet Princess of Wales and the Misses Hopkins had hardy border plants.

Fruit and Vegetable Committee.

Present: Mr. C. G. A. Nix (chairman), Mr. W. Poupart, Mr. J. Cheal, Mr. G. F. Tinley, Mr. T. Pateman, Mr. A. Metcalfe, Mr. A. Bullock, Mr. W. F. Giles, Mr. A. Poupart, Mr. A. C. Smith, Mr. E. Beckett, Mr. E. Neal, Mr. H. Markham, Mr. W. H. Divers, Mr. E. A. Bunyard and Mr. A. N. Rawes.

The only exhibit for award was a Strawberry named Borain, shown by Mr. F. T. Winton, Spaldhurst, Whittlesford, near Cambridge. It was raised from Boreal Giant crossed with Royal Sovereign, and is of the Boreal type, the flower trusses appearing in succession. There were two plants in pots, but only one ripe fruit on each plant.

Groups.

Mr. H. Hemsley, Crawley, showed a very attractive group of Pears and Apples pleasingly decorated with Codiaeums (Crotons) in pots. Considering the poor Apple season, the Apples shown were exceedingly good, and included such sorts as Annie Elizabeth, Mère de Ménage, of exceptional size and highly coloured; Crawley Beauty, Cox's Orange Pippin, the old Catshead, Chelmsford Wonder, Duke of Devonshire, Baxter's Pearmain, Lane's Prince Albert and Bramley's Seedling, all choice fruits of the respective sorts. The Pears included Doyenné du Comice, Doyenné Boussoch, Beurré Clairgeau and Durandeau.

Messrs. G. Bunyard and Co., Ltd., Maidstone, had twenty-two varieties of Pears, including Packham's Triumph, a new variety somewhat after the Williams's Bon Chrétien type, but not so smooth in outline. Others shown well were Le Curé, Beurré Alexandra Lucas, Josephine de Malines, Doyenné du Comice, Passe Colmar, Passe Crassane, Olivier de Serres, Comte de Paris and Verulam.

AWARDS TO CABBAGES.

The following awards have been made to the undermentioned Cabbages by the Royal Horticultural Society after trial at Wisley.

Spring-sown Varieties.

Awards of Merit.—Cotswold Queen, sent by Messrs. J. Jefferies and Son, Ltd; *Wheeler's Imperial* (Warminster Stock), sent by Messrs. Cooper, Taber and Co.; *Primo*, sent by Messrs. Watkins and Simpson.

Highly Commended.

Nonpareil, sent by Messrs. J. Carter and Co.: Express, sent by Messrs. Nutting and Sons, Ltd., St. John's Day, sent by Messrs. Daehnfeldt and Jensen; Midsummer, sent by Messrs. Pennell and Sons; Pride of the West, sent by Messrs. J. C. Wheeler and Son, Ltd.; Primo, sent by Mr. W. H. Simpson; Rosette Colewort: sent by Mr. W. H. Simpson.

Commended.

Stanley, sent by Messrs. Kelway and Son.

RED VARIETIES.

Awards of Merit.

Roode Nunhemmer, sent by Messrs. Nunhem; *Vesuvius Pickling*, sent by Messrs. Ed. Webb and Sons.

Highly Commended.

Red Drumhead (Extra Selected), sent by Messrs. Wheelers (Warminster); Perfect Red, sent by Messrs. Barr and Sons.

AWARDS TO ROSES.

The R.H.S. Rose Judging Committee has made the following additional awards of the Wisley Rose Award (W.R.A.) to Roses under trial at Wisley.

Award Class 1.

Climbing Varieties.—Paul's Scarlet Climber, raised by Mr. W. Paul, sent by Messrs. Dobbie and Co., Edinburgh. *Francois Juranville*, sent by Messrs. A. Dickson and Son, Newtownards, Co. Down.

Award Class 2.

Fraicheur, raised and sent by Messrs. Turbat, Orleans. *Mrs. Wallis*, raised by Mrs. Wallis, sent by Mr. G. Carpenter, West Hall, Byfleet.

Award Class 2.

Single Varieties.—Irish Fireflame, raised and sent by Messrs. A. Dickson and Sons, Ltd.

Semi-double and Double Dwarfs.—Old Gold, raised and sent by Messrs. McGredy, Portadown: *Lulu*, raised and sent by Mr. Easlea, Eastwood; Essex; *Souvenir de Madame Boullet*, raised and sent by M. Pernet-Ducher; *Guynne Carr*, raised and sent by Messrs. A. Dickson and Sons, Ltd.

Dwarf Polyantha Varieties.—Ellen Poulsen, raised and sent by Messrs. Poulsen, Copenhagen: *Chatillon Rose*, raised and sent by Messrs. A. Nonin, Paris.

NATIONAL CHRYSANTHEMUM.

No fewer than twenty-nine novelties were placed before the Floral Committee of the National Chrysanthemum Society at the Royal Horticultural Hall, on Monday, the 15th inst., and nine of these were considered of sufficient merit to receive the award of a First Class Certificate.

First Class Certificates.

Rita (*V.* 2*a*).—A very pretty, large, single variety of light, but rich, chestnut colouring, with a golden-shaded zone around the disc, and gold tips to some of the elegant florets.

Grenadier (*V.* 2*a*).—Another brilliant, large-flowered, single variety; the colour is bright reddish-crimson with a glowing sheen that is very attractive. These two varieties were shown by Mr. H. Shoesmith, junr., Mayford, Woking.

Red Majestic (IIa).—This is a splendid sport from the popular exhibition variety Majestic, and is like the type in all but colour, this being a bronzy-red hue. Shown by Mr. H. J. Jones, Lewisham.

Autumn Tints (IIa).—A big Japanese variety with lightly drooping florets and particularly distinct in colouring; indeed, many years have passed since so distinct a variety has been shown. The colour is fawn, changing to deep reddish-rose on the lower florets, but there are also tints of orange-salmon and pink.

W. Renshaw (IIb)—A large decorative variety of fine substance. The colour is officially described as rosy-apricot, but there is a buff reverse that is very pleasing.

Lady Brunton (IIb).—A decorative variety of reflexing Japanese form. It is very handsome and the colour is a pleasing shade of golden-bronze. These three varieties were shown by Messrs. Keith Luxford and Co.

Scythia (IIa).—A variety of exhibition size with curling and loosely incurving florets. The colour is soft amber.

Golden Seal (*V.*IIa).—This superb, new, large-flowering single variety is sure to be sought after by exhibitors. In form and substance it is first-rate, whilst its colour is rich, glowing buttercup-yellow.

Miss Dorothy Capp. (*V.*IIa)—A useful addition to the pure white, large single varieties. These three vareties were shown by Mr. H. Woolman, Shirley, Birmingham.

IRISH GARDENERS'.

The Irish Gardeners' Association held its monthly meeting at the Red Bank Restaurant on Wednesday, October 27. There was a good attendance of members, it being the annual Apple competition. The year 1926 is generally considered anything but an Apple year, but the display at the meeting was marvellously good, the best for years, and the judges found it no easy task to award the prizes.

In the class for dessert Apples, first prize went to Mr. Charles Coster, Kilcroney, Bray, for a faultless dish of James Grieve; second, Mr. J. Murtagh, Templeogue; third, Mr. W. Filson, Cabinteely; while Mr. T. Webster, Old Conna Hill, Bray, was highly commended.

The cooking Apples were very fine. First, Mr. J. Murtagh; second, Mr. S. Usha-Glencormac, Bray; both showing Peasgood's Nonesuch; third, Mr. C. Dunne, with Bramley's Seedling. Mr. C. Coster, who showed Warner's King, was highly commended.

The Secretary, Mr. J. J. McDonough, managing director of Sir James Mackey, Ltd., Seedsmen, Dublin, is to be congratulated on his arrangements. Conspicuous on the Secretary's table was a vase of Berberis Barbarossa with a wonderful length of stem crowded with scarlet berries, sent to the meeting by Messrs. Watson, Killiney, Co. Dublin; this was admired by all present.

A very pleasant evening was spent, and members of the Irish Gardeners' Association have reason to be pleased that their Society is in such a flourishing condition, with every prospect of being even more so.

AYRSHIRE AGRICULTURAL.

The seventy-second annual show of produce which included fruit, vegetables, cheese, butter, etc., was held recently at Kilmarnock. Compared with last year, the entries marked a slight increase at 1319, which proved to be a new high record in the history of the Society.

The championship for Potatos, which carries with it the Association's Silver Medal, was won by Mr. William Broadfoot, Junr. Brydstone, Beith, with a dish of Arran Comrade, which was also placed first for the best six tubers of any white, round variety. The latter was a big class and all the prize-winning lots were composed of Arran Comrade.

In the large classes for twenty-five, twelve and nine varieties, Messrs. A. and A. Reid, High Williamsland, Stewarton, excelled over Mr. James Thomson, Newark, Sanquhar. All the tubers were even and clean, but the following varieties were outstanding: Ben Cruachan, Di-Vernon, Eighty-fold, King Edward, Majestic, Kerr's Pink, Duke of York and Abundance. Messrs. Reid were also successful in the class for six tubers of any white kidney variety with a dish of uniformly large and well-shaped tubers of Majestic, while Climax, staged by the same growers, received a similar distinction in the class for six tubers of any coloured round variety.

Weight was a prominent feature in the first prize lot of six varieties belonging to Mr. William Laidlaw, Sanquhar, whose tubers of Peacemaker, a kidney-shaped variety with russet skin, were much admired.

The best Potatos staged in the class for two round and two kidney-shaped sorts were Red King and King Edward, grown by Mr. C. McDonald, Darvel, while King Edward again scored for Mr. William Boyd, Dumfries, in the class for six tubers of any coloured variety.

As usual, the competition for six tubers of any new variety not in commerce created much interest, and half-a-dozen promising new sorts were staged. The Association's Silver Medal was awarded to Mr. John Friendship, Sanquhar, for a white, round, unnamed seedling, and among the new introductions of merit were: The Dean, a round Potato with a peculiar, dark, rough skin; and New King, a large, white, oval variety.

Mr. James Thomson, Sanquhar, Dumfries, showed the two best collections of culinary and dessert Apples, and he was also first in the class for three varieties of dessert Apples, including Warner's King, Castle Major, Cutler Grieve, Wealthy and Allington Pippin. The first prizes in the remaining two classes for nine kitchen and the five heaviest Apples and in all the Pear classes were won by Mr. William Proudfoot, Ruthwell.

BIRMINGHAM AND MIDLAND COUNTIES GARDENERS'.

At the fortnightly meeting, held on November 8, an excellent lecture was given by Dr. Ethel Poulton, of the University, Edmund Street, entitled, "Alpine Plants." This was illustrated with coloured lantern slides. Dr. Poulton dealt with the general characters of the plants in their natural habitats, and from a botanist's point of view, describing the formation of the stems and leaves which enable the plants to withstand the rigours of the alpine regions. The lecturer, having travelled the Alps, Pyrenees and Norway, stated that it was surprising how well some of the plants grew in our gardens, when the differences between alpine and garden conditions were realised.

KINGSTON AND SURBITON CHRYSANTHEMUM.

The nineteenth annual exhibition was held at Surbiton Assembly Rooms on November 3, when a fine show of blooms was made entirely by local growers. Those staged by A. C. E. Howeson, Esq. (gr. Mr. M. C. Cannon), Ditton Hill, were remarkably good and were awarded the Kingston and Surbiton Tradesmen's Cup, a N.C.S. Gold Medal and a cash prize in addition. F. G. Wigley, Esq. (gr. Mr. Bonner), Kingston Hill, was a close second. Some very fine flowers grown by amateurs were staged; Mr. C. Bone, of Teddington, won the N.C.S. Certificate for the best bloom with a fine example of Victory. The Certificate in the gardeners' classes went to Juliet, shown by Mr. M. C. Cannon.

Several non-competing exhibits added much to the interest of the show, especially collections of fruit shown by Mr. H. C. Gardner, Ruxley Lodge, Esher; Mr. Weaver, Coombe Court, Kingston Hill, and Mr. Arlotte, Draconia Gardens, Surbiton; there was also a large collection of berry-bearing shrubs from Messrs. Russell, Richmond, and a group of cut Chrysanthemums as grown for market, by Mr. Homewood, of Hampton Nurseries.

Obituary.

William H. Johns.—The death took place at Camborne, on the 5th inst., of Mr. W. H. Johns, a well-known Cornish gardener, and father of Mr. W. H. Johns, Superintendent of Bermondsey Public Gardens and Open Spaces. Deceased had enjoyed remarkably good health until two years ago, when he was found to be suffering from diabetes in an advanced stage, with gangrene of the big toe. He recovered from this complaint, however, but his heart began to fail and ultimately he collapsed. Although the latter part of his illness was accompanied by loss of sight, he retained that remarkable store of forbearance and patience for which he had been noted throughout his life. The funeral took place at Camborne on November 9, in the presence of a large number of relatives and friends. Gardeners from Hayle, Camborne and St. Ives acted as bearers, and there was a wealth of floral tributes. Mr. Johns was born at Redruth on November 21, 1858, and was engaged at the early age of nine years in Messrs. John Nicholls' Green Lane nurseries. While with that firm he assisted in the laying out of several Cornish gardens, which were then being planted with Rhododendrons and various choice shrubs for which Cornwall is now noted. Later he entered private service, and amongst other places, was gardener at Tregenna Castle, St. Ives, before that place was acquired by the Great Western Railway, at Parc Bracket, Camborne; The Rectory, Camborne and Bassett Villas, Camborne, the residence of the late Mrs. J. Bickford, at which place he was gardener for twenty-five years, and only left on the subdivision of the estate consequent upon the death of the owner. From Camborne he went to Tolroy, Hayle, of which he had charge for fifteen years. Mr. Johns was a thoroughly practical, all-round gardener; he was a successful exhibitor and also acted as judge at most of the west Cornwall exhibitions. He was a successful hybridiser, and from 1895 onwards raised erect Camellia-flowered strains of Tuberous Begonias, and also weeping or basket varieties, which were a great favourite with him. He was extremely skilful in laying out gardens on natural lines, with graceful curves, and in painting pictures with flowers, lawns, foliage plants, shrubs and trees. As a propagator he was extremely successful with the cold frame and raised hundreds of the more or less uncommon shrubs, including Drimys Winteri, Tricuspidaria lanceolata and T. dependens, Pittosporum Mayi, P. eugenioides, P. Tobira, Embothrium coccineum, Berberidopsis corallina, Olearia macrodonta, Fabiana imbricata, Desfontainea spinosa and Clianthus puniceus, and seemed to have the happy flair of knowing the right kind of growth to select and the right moment for striking these various trees and shrubs. His very retiring disposition and his desire to serve others characterised his life until the end. He leaves a widow, a son and three married daughters.

Charles Henry Wood.—An inquest was held on Friday, the 12th inst., concerning the death of Mr. Charles Henry Wood, a Bermondsey gardener, who resided at Thornton Heath. Mr. Wood met his death through erysipelas arising out of an abrasion of the skin of the index finger of the right hand, whilst at work in removing a tree stump at Tooley Street, Bermondsey. This was considered a very superficial and trivial injury at the time and was not reported as an accident in the usual way, deceased merely scratching or grazing his skin against the pavement whilst swinging a mattock during the process of cutting a tree root. The funeral took place on Saturday, November 13; tributes were sent from the staff and from the Beautification Committee of Bermondsey.

G. Minns.—Those many gardeners who were in various ways associated with the Chelsea Nurseries of Messrs. James Veitch and Sons, will regret to learn of the death, no Tuesday last, of Mr. G. Minns, who for a very long period was a departmental foreman, having charge of the hard-wooded plants in the days when these were grown extensively. He occupied other positions as the fashion in plants changed, but he was always a capable cultivator, and no change of circumstances affected his unfailing good humour. Many years ago he underwent an operation which necessitated the amputation of one leg; after recovering, he was fitted with an artificial limb, but even these disabilities could not depress him; indeed, if it were possible, he was even jollier after his loss than before it. Few men were more widely known or better liked than Mr. Minns in the old Chelsea days. He was granted a pension when the nursery was dissolved, and this he enjoyed for many years. Death followed an acute attack of bronchitis.

ANSWERS TO CORRESPONDENTS.

DRY WALL GARDEN. *A. B. C.* The height you suggest, *viz.*, four feet to four feet six inches, would be suitable, and a wall such as you propose building would give a very fine effect when furnished with plants. Take out sufficient soil to ensure a good foundation for the wall, and if the ground is loose in texture it should be rammed hard. When building the wall place a moderate layer of soil on each course, leaving plenty of pockets for accommodating the plants. The planting should be done when the building of the wall is finished. If you have various sized stones to use, mix the smaller sizes with the larger ones, and give the wall a slight tilting inwardly so as to retain the earth behind it, otherwise if built too erectly, you may find it give way and fall down. An angle of 75° is suitable.

NAMES OF PLANTS.—*R. B.* Single Sunflower: a form of Helianthus rigidus; double Sunflower: H. multiflorus plenus; Begonia semperflorens variety. *W. M. M.* Celandrinia umbellata, a native of Chile. *Barton, Hartshorne.* 1, Platanus acerifolia; 2, Pyrus Aria var. majestica; 3, P. salicifolia; 4, P. intermedia. *J. B.* Tamus Communis var. cretica (Bryony).

PEAR LEAVES BLISTERED.—*A. H.* The black galls on the Pear leaves are due to the Pear-leaf Blister mite, Eriophyes pyri. Pick off and burn the affected foliage, and this winter spray the trees with kerosine emulsion.

RAISED VINE BORDER.—*G. P.* Your Vine border is none the worse for being above the ground level, as this gives a better opportunity for watering and feeding the vines during the growing season. It must be remembered, however, that such a border naturally dries quicker than one on the level, and should never be allowed to become extremely dry, either inside or out. Diluted sewage may safely be used now and will benefit the vines, but before using this a good soaking of clear water should be given. Any reliable vine manure will answer your purpose for winter dressing and feeding next season, if used according to directions accompanying it.

TREATMENT OF BOWLING GREEN.—*J. H.* While a top-dressing of good loam would, as you state, add body to the impoverished soil, there is, in the use of loam as a top-dressing, an ever-present danger of also adding weeds to the turf. If, however, the available loam is known to be free from weed seeds, its use would be beneficial. For present use your manurial formula appears to be suitable for your purpose. We should supplement it by a dressing in early March of half the quantity of sulphate of ammonia to three parts of superphosphate.

WORM CASTS IN A LAWN.—*G. F. W.* We recommend you to obtain one of the proprietary worm-killers sold by horticultural sundriesmen, which will destroy the worms and help to keep the lawn in good condition.

Communications Received.—W. H. L.—G. E. T.—H. M.—T. W. B.—J. Y.—J. G. B.—J. A.—G. W.—C. I.—M. H.—G. R.

MARKETS.

COVENT GARDEN, Tuesday, November 16th, 1926.

Plants in Pots, etc.: Average Wholesale Prices.

(All 48's except where otherwise stated).

	s. d. s. d.
Adiantum cuneatum per doz.	10 0 12 0
—elegans	12 0 15 0
Aralia Sieboldii	9 0 10 0
Araucarias, per doz.	30 0-42 0
Asparagus plumosus	12 0-18 0
—Sprengeri	12 0-18 0
Aspidistra, green	36 0-60 0
Asplenium, doz.	12 0-18 0
—32's	24 0-30 0
—nidus	12 0-15 0
Cacti, per tray —12's, 15's	5 0—7 0
Cyclamens, 48's, per doz.	18 0-21 0
Chrysanthemums, in variety, 48's, per doz.	18 0-30 0
Crotons, doz.	30 0-45 0
Cyrtomium	10 0-25 0

	s. d. s. d.
Erica gracilis, 48's, per doz.	24 0-36 0
—60's, per doz.	9 0-12 0
—hyemalis, 48's, per doz.	24 0-30 0
—60's, per doz.	12 0-15 0
—nivalis, 48's per doz.	24 0-36 0
—60's „	12 0-15 0
—72's „	8 0--9 0
Hydrangeas, white, 48's per doz.	24 0-30 0
Nephrolepis in variety	12 0-18 0
—32's	24 0-36 0
Palms, Kentia	30 0-48 0
—60's	15 0-18 0
Pteris, in variety	10 0-15 0
—large, 60's	5 0--6 0
—small	4 0--5 0
—72's, per tray of 15's	2 6--3 0
Solanums, 48's, per doz.	12 0-18 0
—60's, per doz.	9 0-10 0

Cut Flowers, etc.: Average Wholesale Prices.

	s. d. s. d.
Adiantum decorum, doz. bun.	12 0-15 0
cuneatum, per doz. bun.	8 0-10 0
Asparagus plumosus per bun., long trails, 6's	2 6--3 6
med. sprays	1 6--2 6
short	0 9--1 3
—Sprengeri, bun. long sprays	1 6--2 0
med. „	1 0—1 6
short „	0 4—1 0
Bouvardia, white per doz. bun.	12 0-15 0
Camellias, 12's, 18's per box	2 6--3 0
Carnations, per doz. blooms	3 0—4 6
Chrysanthemums, white, per doz.	3 0--6 0
—bronze „	3 0—6 0
—white, per doz. bun.	9 0-12 0
—bronze, per doz. bun.	9 0-12 0
—yellow, per doz. blooms	3 0—5 0
—yellow, per doz. bun.	9 0-12 0
—pink, per doz. blooms	3 0--6 0
—pink, per doz. bun.	10 0--12 0
—specimens, per doz. blooms	15 0-18 0
—Single Varieties—disbudded blooms, per doz.	3 0—4 6
—spray, per doz. bun.	15 0-18 0
Croton leaves, per doz.	1 9—2 6
Fern, French, per doz. bun.	10 0-12 0
French Flowers—	
—Acacia (Mimosa), per doz. bun.	12 0-15 0
—Eucalyptus, per pad	5 0—6 0
—Ruscus, green, per pad	6 0--8 0
—Myrtle, green, per doz. bun.	1 6—2 0
—Narcissus, Paper White, per doz. bun.	4 0—4 6
—Solanum berries. 300's, per pad	7 0—9 0

	s. d. s. d.
French Flowers—	
—Violets, Parma, per bun.	3 0—4 0
Gardenias, 12's, 18's per box	5 0—7 0
Heather, white, per doz. bun.	6 0—9 0
—pink, per doz. bun.	6 0—8 0
Honesty, per doz. bun.	15 0-18 0
Lilac, white, per doz. stems	6 0—7 0
Lilium auratum, per doz. blooms	10 0-12 0
—longiflorum long, per doz.	4 6—5 0
—speciosum rubrum, long, per doz. blooms	3 6—4 6
—short, doz. blooms	2 6—3 0
Lily-of-the-Valley, per doz. bun.	24 0-36 0
Marguerites, yellow, per doz. bun.	2 6—3 0
Orchids, per doz.	
—Cattleyas	24 0-36 0
—Cypripediums per doz. blooms	6 0—8 0
Ranunculus—	
—double scarlet	4 0—6 0
—white	4 0—4 6
—yellow	5 0—6 0
Richardias (Arums), per doz. blooms	8 0-10 0
Roses, per doz. blooms—	
—Madame Abel Chatenay	3 0—4 0
—Molly Sharman Crawford	3 0—4 6
—Richmond	3 6—5 0
—Golden Ophelia	4 0—5 0
—Sunburst	3 6—4 6
—Mrs. Aaron Ward	3 6—4 0
—Madame Butterfly	4 0—7 0
—Safrano, 24's per packet	2 3—2 6
Smilax, per doz. trails	3 0—4 0
Stephanotis, per 72 pips	— 4 6
Violets	3 0--4 0

The market is glutted with Chrysanthemums, and there are some very inferior flowers, both blooms and spray. Prices fluctuate according to the quality. Consignments were difficult to clear on Saturday. The milder weather has favoured the development of Carnations and Roses. Richardias (Arums) are much better in quality and their prices are easier; this also applies to Lilium longiflorum and pink L. lancifolium. Country requirements have been more steady and there was no special demand for Armistice Day. Other subjects from home-growers are similar to those given last week. A few boxes of scarlet Nerines have been arriving from Guernsey in excellent condition. Other subjects from Guernsey are Cypripediums, single Violets, Anemones and a good supply of Smilax. More white Lilac is coming from Holland, and the spikes are finer in quality, and Dutch growers are sending Lily-of-the-Valley and Chrysanthemums. Supplies from France are increasing almost daily: the most attractive cut flowers are Narcissus Paper White, which is much better in quality this week, Safrano Roses, Marguerites, Acacia (Mimosa) and Parma Violets, which varied in price last week from 2/6 to 10/- per bunch, the supplies being so uncertain.

Fruit: Average Wholesale Prices.

	s. d. s. d.
Apples, American—	
—York Imperial per barrel	20 0-22 0
—Jonathan, per case	10 0 11 0
—British Columbian Jonathan	10 0-12 0
Apples, English—	
—Newton Wonder	10 0-14 0
—Bramley's Seedling	10 0-20 0
—Lane's Prince Albert, bush.	10 0-16 0
—Californian Newtown Pippin	10 0-11 0
—Jonathan	10 0-11 0
—Ben Davies per barrel	16 0-18 6
—Winesap per barrel	20 0-22 0
Bananas	11 0-22 6
Chestnuts, Redon, per bag	15 0-18 0
Cob nuts, per lb.	0 8—0 9
Figs, French, per box	1 0—1 6
Grape Fruit—	
—Blue Goose	30 0-35 0
—British Honduras	22 0-25 0
—Isle of Pines	22 6-25 0

	s. d. s. d.
Grapes, English—	
—Canon Hall	4 0—6 0
—Gros Colmar	1 9—3 0
—Alicante	1 0—3 0
—Muscat	4 0—7 0
Grapes Belgian	1 0—2 6
—Almeria	16 0-30 0
Algerian Mandarins 90's 96's 100's	— 10 0
Lemons, Messina, per case	14 0-20 0
—Naples	10 6-35 0
Melons—	
Oranges—	
—Californian	20 0-25 0
Peaches, Belgian per doz.	8 0-20 0
Pears, English—	
—Comice	10 0-15 0
—Special, per doz.	4 0-10 0
Pears—	
—Californian Comice—cases	20 0-30 0
—Winter Nelis, ½-case	16 0 24 0
—Beurré D'Angou	20 0 24 0
Pines	2 6—4 6
Walnuts, Grenoble ... bag	10 0-12 0

A moderate volume of business has been done during the week and conditions on the whole are good for the season of the year. The Apple market is a fairly full one, and quantities are on the low side for imported varieties. The few English Apples marketed are selling very well, in the case of fruits of the first grade. Hothouse Grapes remain in steady demand with values unchanged in both the English and Belgian sections. Fair supplies of English Doyenné du Comice Pears are being marketed, and while the prices show some improvement they are not altogether satisfactory from the growers' point of view. Hothouse forced Beans are comparatively cheap, the quantities being large for the time of year. Madeira Beans are plentiful and cheap. Cauliflowers, while not unduly abundant, are selling at low rates. The few new crop Tomatos sell quite well, but the old crop fruits are not wanted. The Cucumber trade is fairly good and prices are slightly higher. Mushrooms are more plentiful and prices are slightly easier. Salads are an improving business, but trade in green vegetables is quiet. The Potato trade is firm.

GLASGOW.

The cut flower market was disappointing last week when prices suffered a sharp reaction. In view of Armistice Day and an expected demand for wreaths growers increased their supplies, but salesmen experienced a difficulty in disposing of Chrysanthemums at prices which marked in some cases, a fifty per cent. reduction. Thorpe's (white and lemon) only realised from 6d. to 1/- for 6's; Blanche du Poitou, 8d. to 1/-; Cranford Yellow, 9d. to 1/-; Pink Profusion, 10d. to 1/-; Almirante and Delores, 9d. to 1/2; Rose Maid, La Pactole and Jean Paterson, 10d. to 1/3; and Pegrum, 1/- to 1/3. Prices of Roses remained steady at 4/- to 5/- per dozen for pink shades, and 3/- to 4/- for crimson and white. Carnations were worth from 3/6 to 4/6 per dozen, and Lilium longiflorum (Harrisii), 6/- to 7/- per bunch. Asparagus fluctuated between 6d. and 9d. for small bunches, and 9d. to 1/6 for large; while Smilax averaged 1/-.

As usual in the November term week, the fruit market was quiet, and as American and Canadian Apples continued plentiful, values, according to the following list, were generally on the down grade. Greening (R.I.) No. 1, 25/- to 26/- per barrel, No. 2, 20/- to 21/-; Domestic, 21/- to 23/-; King, No. 1, 24/- to 27/-, No. 2, 19/- to 22/-; Scarlet Baldwin No. 1, 22/- to 25/-, No. 2, 18/- to 20/-; Scarlet Pippin, No. 1, 22/- to 24/-, No. 2, 18/- to 20/-; Wagner, No. 1, 26/- to 28/-, No. 2, 20/-; Starks, No. 1, 20/-, No. 2, 16/-; Domestic, 18/-; Halberton, 18/- to 19/-; Russet, 20/- to 25/-; and Twenty Ounce, 18/-. British Columbia Apples, in cases, realised 13/- to 14/- for ex-fancy Delicious; 12/- to 13/- for fancy; 9/- to 11/- for Jonathan and McIntosh Red; 8/- to 10/- for Washington Jonathan; and 18/- to 22/- per barrel for Virginia York Imperial. Grape Fruit was cheaper at 15/6 per case, and Jamaica Oranges averaged 17/-. Canadian Duchess Pears made 9/- to 10/6; Washington Winter Nelis Pears, 13/- to 14/6; and Californian Winter Nelis 14/- to 14/6 per half-case. Malaya Lemons realised 16/6 for 360 counts; 420, 18/6, and Tripoli, 250's, 10/6. Almeria Grapes were dearer at 17/- to 35/- per barrel. Scotch Gros Colmar Grapes were worth 3/6 per lb. Scotch Tomatos were in little demand at 5d. to 7d. per lb; while Teneriffe Tomatos realised 18/- to 26/- per bundle. Green Tomatos were unsaleable.

CATALOGUES RECEIVED.

AUSTIN AND MCASLAN, Glasgow.—Alpine and herbaceous plants; trees and shrubs, fruit trees, etc.

H. SCOTT AND SONS, Woodside, S.E.25.—Sundries.

W. CUTBUSH AND SON, LTD., Barnet, Herts.—Trees, shrubs, climbers, etc.

Foreign.

M. HERB, Via Trivio, 24-36, Naples, Italy.—Seeds. (Wholesale.)

THE
Gardeners' Chronicle
No. 2083.—*SATURDAY, NOVEMBER* 27, 1926

CONTENTS.

- Alpine garden—
  - Helianthemum alyssoides 428
  - Leontopodium alpinum 428
  - Margyricarpus setosus 428
- Apiary notes 433
- Apples and Pears, the ornamental effect of certain varieties of... 428
- Apples at the Leeds Chrysanthemum show 436
- Autumn colouring in 1926... 436
- Books, notices of—
  - Cotton 432
  - Winter blossoms ... 432
- Botanist's paradise, twenty days in a ... 430
- British Industries Fair 421
- Bulb garden—
  - Brunsvigia Josephinae 426
  - Sternbergia lutea ... 426
- Chrysanthemums at Rouen 422
- Fuel shortage in gardens 436
- Fruit garden—
  - Care of young fruit trees 434
  - Gooseberries and Currants... ... 434
- Fruit Register—
  - Highly-coloured Apples 434
- "Gardeners' Chronicle" seventy-five years ago 423
- Garden notes from south-west Scotland 431
- Gooseberry, die-back disease of 434
- Hardy flower border—
  - Anemone Pulsatilla 426
  - Mertensia virginica and M. sibirica 426
  - Morina longifolia ... 426
  - Pulmonaria rubra... 426
- Hyeres College of Agriculture 423
- Indoor plants—
  - Fuchsia serratifolia 429
  - Geums as pot plants 429
  - Moschosma riparium 429
- Iris garden—
  - The best bearded Irises for Canada 426
- Nursery notes—
  - Oliver and Hunter, Moniave 433
- Oak, an epidemic disease of the 423
- Obituary—
  - Atkins, Edward ... 439
  - Noble, Andrew ... 439
  - Webster, Jabez. ... 439
  - Woolman, H. ... 439
- Orchid notes and gleanings—
  - Cypripedium guttatum ... 429
- Orchids, new hybrid... 429
- Pallett, Mr. George ... 422
- Paris horticultural exhibitions 421
- Parks and gardens, public 433
- Plums, two crops of ... 436
- Ribes speciosum, fruiting of 436
- Rose garden—
  - Moss Roses... ... 426
- Rubber production ... 421
- Salvia Pittieri... ... 436
- Saxifraga Cotyledon var. caterhamensis... 427
- Sibthorpia europaea in grass 436
- Slugs and King Edward Potatos 436
- Societies—
  - Birmingham Chrysanthemum ... 437
  - Guildford Chrysanthemum 437
  - Hitchin Chrysanthemum 439
  - Orchid Club ... 437
  - Reading and District Gardeners' ... 437
  - St. Albans Gardeners' 437
- Trees and shrubs—
  - Abies Forrestii ... 427
  - Forsythia 427
  - Spartium junceum... 427
- Ultra-violet light ... 421
- Vegetable garden—
  - Forcing vegetables on hot-beds ... 435
- Wahlenbergia serpyllifolia var. major ... 436
- Watford, combined show for 422
- Week's work, the ... 424
- Wisley, notes from ... 432

ILLUSTRATIONS.

- Abies Forrestii 427
- Apple Royal Jubilee 435
- B. F. F. Gold Medal exhibit of market Chrysanthemums and plants 431
- Cypripedium guttatum 429
- Fuchsia serratifolia 423
- Pallett, Mr. Geo., portrait of 422
- Primula Florindae 425

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last fifty years at Greenwich, 41.1.

ACTUAL TEMPERATURE—
The Gardeners' Chronicle Office, 5, Tavistock Street, Covent Garden, London, Wednesday, November 24, 10 a.m. Bar. 30.1. Temp. 48°. Weather, Slight fog.

Ultra-Violet Light.

THE discovery that the invisible rays beyond the violet end of the spectrum exercise a beneficent influence on the health of animals, seems to be well established. The latest application of the discovery consists in the installation of "vita glass" in certain of the houses at the Zoological Society's Gardens with the result that monkeys and other animals which previously used to mope and ail in dull weather now skip about cheerfully and enjoy rude health. Inasmuch as vita glass, the invention of Mr. Lamplough, differs from ordinary glass in being transparent to the ultra-violet rays, it is to be inferred that the new spirit of cheerfulness evinced by the animals at the Zoo is due to the daily ultra-violet bath which they now receive. To the plant physiologist these discoveries make a special appeal. He knows that not only the health, but the very life of the green plant depends upon light. He is aware, moreover, that plants respond in many ways and with exquisite sensitiveness to different rays, and therefore he would very much like to know whether any of the manifold activities of plants are specially affected by the ultra-violet rays. There is as yet, so far as we know, no definite evidence that this is the case. For the indispensable synthesis of Sugar and similar food materials, light is, indeed, essential; but although it may be that all rays of the spectrum contribute to this synthesis, there are good reasons for holding that certain of the rays in the neighbourhood of the red and yellow region of the spectrum are most efficient in supplying chlorophyll with the energy necessary for synthetic manufacture of carbohydrates, for these rays—together with certain in the blue region—are those which are absorbed by chlorophyll. On the other hand the rays which do most towards keeping growth in gear, maintaining a due proportion between the growth of stem and leaves, are demonstrably those in the blue region of the spectrum. With this valuable but crude knowledge plant physiologists must for the moment rest content. But it is greatly to be hoped that further research will be made into the influence of light of different wave lengths on plant processes. That prime mystery of life, which we call growth, exhibited by every cell of animal and plant is still in the main a *terra incognita*. That it is regulated—speeded up or slowed down, arrested and set going again—is a manifest fact, but of the regulators, accelerators, retarders, arrestors and requickeners of growth, next to nothing is known. When, for example, seedlings grown under glass in Winter or Spring become long and weedy—drawn, as the gardener says—we have a manifestation of the ungearing or disharmonious functioning of growth due to insufficient light. It may be, however, that it is not so much deficiency of light in general, but deficiency of light of a certain kind, that is responsible for the unhealthy state of the seedlings. The glass being opaque to the rays beyond the violet, may, by shutting off these rays, be, as it were, poisoning the plants. It would therefore be interesting to find out whether vita glass, which admits of a larger ration of ultra-violet light reaching the plant, would prevent seedlings from becoming drawn. It might seem easy to make a crucial experiment to determine this point; but although not impossible the experiment is less easy than it might seem to be. For it is possible that the plant, unlike animals in general, is able to use light of longer wave length than the ultra-violet for the purpose of manufacturing those stimulators and regulators of growth which may be called growth-hormones. Yet even if this were proved to be the case, it might yet be that ultra-violet light plays a specific part in the life of plants. It is well-known, for instance, that plants only come into flower when they reach a certain age. The actual age varies enormously with the kind of plant, ranging from days in the case of ephemerals to many years in the case of certain perennials—Palms, Aloes and the like. Plant physiology can supply no satisfactory explanation of this remarkable fact. For all we know, floriferousness, which is supposed by many investigators to depend on a proper ration between carbohydrate and protein food, may be due to something far more subtle—as, for example, the formation of what for sake of a better term we may call a flower-forming hormone, which in turn may depend on the arrival in the plant of the right kind and right amount of light. Given too little, and perhaps also given too much, the plant remains sterile, and only when it receives the right dose of light of the right wave length is the plant able to initiate those drastic changes which result in the replacement of normal leaves by floral leaves and reproductive organs. On high mountains the ultra-violet light of the sun which amounts, it is said, to about one per cent. of the total radiation, is less diluted than it is in the plains, and it is possible that directly or indirectly this exposure of the alpine plant to relatively large amounts of ultra-violet radiation is responsible for their peculiarities—brilliancy of colour and tuftedness of habit. It is, indeed, only just dawning upon physiologists that life is far more subtle and complex than they had supposed. With this truer view of the life of the plant, there will surely come reinvestigation of many phenomena which according to the older, cruder, and falsely simple view needed no investigation. Whether vita glass is destined to play any part in economic horticulture, it is impossible to say, but it rarely happens that a new invention fails to find unexpected uses, and for all we know in the near future growers under glass may be building their new houses with glass which permits of the passage of the maximum amount of solar radiation.

British Industries Fair.—It is announced officially that the whole of the space in the British Industries Fair, which is to be held simultaneously in London and Birmingham, from February 21 to March 4, next, has been taken, with the exception of a few spaces rendered vacant in the Birmingham section by extensions of the Castle Bromwich premises. No more applications for space in the London section at White City, Shepherds Bush, can be considered.

Paris Horticultural Exhibitions.—In connection with the forthcoming Centenary of the Société Nationale d'Horticulture de France, two great International Exhibitions are to be held in Paris. The first will take place from May 25 to June 3, 1927, and the second from October 28 to November 6. Arrangements are well in hand for the spring exhibition, in which several foreign countries are expected to participate; the Belgian exhibitors have formed a committee to arrange their exhibits; the Dutch have asked for information, and there will probably be quite a strong Dutch section. Although the exhibition, unfortunately, clashes with the Chelsea show, a number of English firms are expected to put up exhibits in Paris. Among these firms will be *The Gardeners' Chronicle, Ltd.*, which has already applied for a space where the publications of the Company will be on view, as at Ghent in 1923. The proprietors of this journal have also offered a large Gold Medal for award in one of the classes at the exhibition.

Rubber Production.—Some interesting facts concerning the Rubber industry were given by Sir Stanley Bois, President of the Institution of the Rubber Industry, at a meeting of the Royal Society of Arts, held on the 2nd inst. This important commodity was first discovered by the Spaniards early in the sixteenth century when they observed the natives playing with a ball made of a black substance exuded from a certain tree. It was not until 1770 that Rubber was put to use in erasing marks made by lead pencils, hence the name India-rubber. Later, in the early part of the nineteenth century, its application by Hancock and Mackintosh for the proofing of pillows and garments marked another stage in its economic progress, and in 1840 the vulcanisation of Rubber rendered it applicable for increasingly varied purposes. So late as 1900, Rubber supplies were obtained from trees growing wild on the banks of the Amazon and the interior of Africa, but with the advent of the bicycle and subsequently of the motor, the demand for Rubber increased so tremendously that its price rose to some 12s. per pound. The profitable cultivation of Rubber to augment the scanty supplies previously derived from wild sources soon engaged the attention of planters, and from a production of 54,000 tons in 1900 it has extended to the huge amount of 505,000 tons in 1925, of which 475,000 tons were derived from the plantations of the Middle East. Sir Stanley gave some interesting figures in regard to the production of Rubber in the Federated Malay States, which exported 104 tons in 1905, and 107,000 tons in 1925. In a discussion which followed the lecture, Mr. Walter C. Hancock stated that his uncle in 1857 called attention, through the medium of *The Gardeners' Chronicle*, to the possibility of cultivating the best kinds of Caoutchouc-bearing plants in the East and West Indies. Sir William Hooker, who was then at Kew Gardens, offered to give any assistance he could from the botanical point of view.

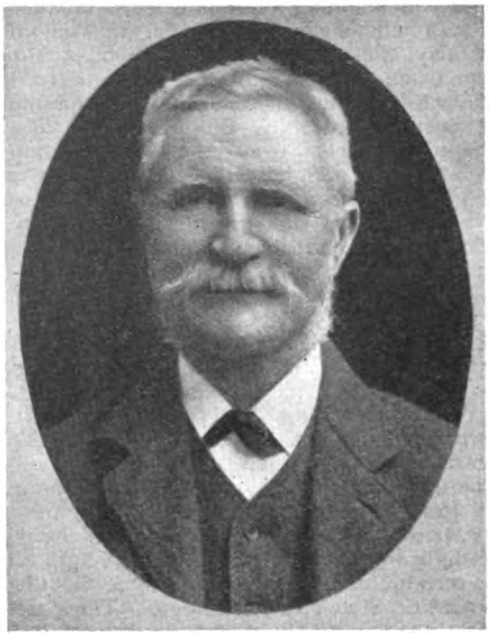
Fruiting of Periploca graeca.—Although the vigorous, climbing Periploca graeca is a fairly popular garden plant and one frequently used to clothe walls and pergolas, its fruits are not so well-known as its fragrant, starry, brownish-purple and yellow flowers. From Mr. Dalrymple, Bartley, Southampton, we have received a small box of the quaint fruits of this species; the cylindric pods are in pairs and taper to a point where they are joined. Periploca graeca exudes a poisonous, milky juice when its stems are broken, and it is also interesting by reason of the curious tuft of long, silky hairs attached to each of the numerous seeds, many of which are packed tightly in the slender pods.

Index Kewensis.—The publication of the Sixth Supplement of the *Index kewensis* will be of very great value to authors and others as it includes a large number of new species of plants, many of them of great garden value, collected during recent years in China and elsewhere. The new Supplement covers the years 1916-1920, so that there are still numbers of new plants which are not yet included in the *Index*. Many species have been added to certain genus in the Supplement; for instance, nearly seven columns are devoted to species of the genus Piper, hitherto unrecorded in the *Index*. The additions in the genus Rubus are also very numerous, and no fewer than nine columns are devoted to species of Rosa. Rhododendron, Primula, Saxifraga, Oxalis, Hieracium, Eugenia, Epidendrum, Dendrobium, Acacia, Cinnamonium and Bulbophyllum are other genera which have many species added.

Mr. Hugh F. Macmillan.—Old Kewites will learn with pleasure that Mr. Hugh F. Macmillan, formerly Superintendent of the Botanic Gardens at Peradenya, Ceylon, has been appointed Botanical and Horticultural Advisor to the Anglo-Persian Oil Company. For the present his engagement is for one year, and his business will be to explore and advise upon the possibilities of re-afforestation and irrigation, the introduction of trees and shrubs, either of economic or decorative value, in the large area of country in which the Anglo-Persian Oil Company is interested. Mr. Macmillan sailed from England on Thursday, November 25, and on his way out to Persia he will visit Egypt, Palestine, Syria and Iracq; on his return a year hence he hopes to visit India. Mr. Macmillan's headquarters in Persia will be at Abadan; he hopes to find time during his travels to collect specimens of the Persian flora.

Certified Stocks of Seed Potatos in Scotland.—The Board of Agriculture for Scotland announces that certificates have been issued in respect of the Potato crops of the immune varieties which were inspected during the past growing season and were found to be true to type and to attain a standard of purity of not less than 99.5 per cent. As in previous years, a Register of the certified crops has been compiled for the information of Potato growers, merchants and dealers. This register, which contains full particulars of the names and addresses of the owners and of the respective varieties and acreages of the certified crops is now available. It will be sold at the nominal price of 2s. Applications for copies of the Register should be made to the Secretary, Board of Agriculture for Scotland, York Buildings, Queen Street, Edinburgh, and should be accompanied by the appropriate remittance.

Mr. George T. Pallett.—The veteran gardener, whose portrait we give on this page, has just completed fifty years of service with one family, *i.e.*, with the late George Henry Strutt, Esq., and his son, G. Herbert Strutt, Esq., Makeney, Milford, Derbyshire. As a lad, Mr. Pallett began his gardening career in the gardens at Bayfordbury, Hertfordshire, and, later, was employed in the nurseries of Messrs. William Paul and Son, Waltham Cross. In 1876 he became foreman in the gardens of the late G. Henry Strutt, Esq., at Bridge Hill, Belper, a position he occupied until September, 1879, when he was appointed gardener to G. Herbert Strutt, Esq., a position he has held ever since, to the satisfaction of all concerned. A fine, all-round cultivator, Mr. Pallett has, like all other plant lovers, his favourite subjects, and his pet weakness is Cyclamen. He is also a keen bee-keeper and has for many years been chairman and treasurer of the Derby Bee-keepers' Association. In addition to his record as a gardener and judge, Mr. Pallett has a fine record of public service. In 1889 he became Hon. Secretary of the Milford Institute, and still remains in office; in 1905 he was appointed a member of the Board of Directors of the Milford and Holbrook Co-operative Society, and for the past fifteen years he has been President of that society. In 1900 he became a Parish Councillor, and this position entailed an appointment on the Duffield and Milford Joint Burial Board; he is now Chairman of the Council. In addition to these services, Mr. Pallett is one of the managers of the Milford Schools and Hon. Secretary of the Milford Nursing Association. Perhaps it is because of his many activities that Mr. Pallett refuses to grow old in spite of his seventy-three years and a continuous record of fifty years' service with one family.



MR. GEORGE T. PALLETT.

Combined Show Proposed for Watford.—Inspired, no doubt, by the success that has attended the enterprise of the Southport authorities, the horticulturists of the Watford and District Horticultural Society have been considering the promotion of a combined effort. At a recent meeting presided over by the Mayor, Mr. Alderman H. B. Watkins, when representatives of local horticultural and allotment societies were present, together with others interested in horticulture, there appeared to be a general opinion in favour of an amalgamation of forces and the holding of a big exhibition in Cassiobury Park under the aegis of the Town Council. Eventually the meeting decided to form one Society for the purpose of conducting a big show and to call it the Watford Horticultural Society. A committee was then elected and a proposal made to establish a guarantee fund.

Chrysanthemums at Rouen.—M. Eugene le Graverend, Director of the Public Gardens at Rouen, organised in the Orangery of the Botanic Garden a free public exhibition of Chrysanthemums, which lasted from the 4th to the 21st of November. A card of invitation was issued, of which the following is a translation:—"In Japan, the great festival of Chrysanthemums takes place each year, and has done so ever since the ninth century, on the ninth day of the ninth month. This autumn, the Public Gardens Department is representing a scene in the Imperial Garden at Asakura (a suburb of Tokio) where this great festival is held. Lovers of the Golden Flower, do us the honour of visiting this interesting representation."

Legacies to Gardeners.—The Rev. Joseph H. Pemberton, whose death was recorded in our issue for July 31, 1926, left a sum of £500 to his head gardener, Mr. John Bentall, £250 to his chauffeur, Mr. Leonard Chaplin, and one year's wages to his other servants. Mr. Pemberton's estate amounted to £29,439.—Mr. James Alexander Morison Heyn, of Strandtown House, Belfast, left a sum of £250 to his gardener and "faithful servant," Mr. Samuel McClure.—Lt.-Col. Anthony Martyn of Buckingham Lodge, Exmouth, who died on October 5 last, bequeathed a sum of £100 to his gardener, Mr. Chas. Henry Gibbons.

Best Empire Apples.—A remarkable achievement was accomplished by the British Columbia Fruit Growers at the Imperial Fruit Show in securing for the third time in successive years the Grand Championship Award for the best dessert Apple grown within the British Empire. The Apples which secured this award were grown and shipped by the Associated Growers of British Columbia, and by winning the Challenge Cup for the third successive year this organisation now becomes the owner outright.

Tree Planting in Ohio.—The members of twenty-six branches of the Isaac Walton League have planted forty-five thousand forest trees on the farms and municipal parks in the state of Ohio. Each branch of the League is expected to plant one acre of ground each year; the State furnishes the trees, the League members do the planting, and then the farmer or park superintendent affords the necessary protection and care. By this means the Isaac Walton League expects to establish game coverts and bird sanctuaries and assist farmers in the reclamation of waste land.

French Gardeners' Association.—On Sunday, October 10, the French Gardeners' Association, a mutual and provident society, held its annual assembly under the presidency of M. Queuille, the Minister of Agriculture. After the business was completed a banquet took place, at which there were about two hundred present, including M. Queuille, who again presided, the Minister of Labor, M. Alfred Nomblot, and other distinguished people. The room was beautifully decorated with Palms, and the tables with Orchids and Dahlias. Several speeches were made, and M. Queuille closed a series of toasts by congratulating the members of the Association on the success of their Society and the capability and devotion of its officials, finally raising his glass to "The Continued Prosperity of the Association and all its Adherents."

American Rose Society.—During the present year twenty-three new Roses have been registered and twenty-one medals awarded by the American Rose Society. Jointly with the department of Agriculture the American Rose Society sent out a Rose named Sarah van Fleet, and the profit resulting therefrom has amounted to 450 dollars, while Rose Dr. F. Mills has brought in 700 dollars. In response to a questionnaire sent to members of the Society asking for votes to indicate the best Roses, there were 755 replies; the tabulated results placed Radiance at the head of the Hybrid Teas, with 727 votes, and Ophelia second with 640; Dr. van Fleet headed the list of climbing Roses with 811 votes, and Paul's Scarlet Climber came second with 729. Frau Karl Druschki led in the Hybrid Perpetual section; Mdlle. Cecile Brunner was at the top of the polyantha varieties, whilst Ville de Paris was considered the best of the novelties. The most popular dozen Roses, as shown by the voting, were Radiance, Ophelia, Red Radiance, Duchess of Wellington, Los Angeles, Madame Butterfly, Columbia, Gruss an Teplitz, Souvenir de Claudius Pernet, Madame E. Herriot, Kaiserin Augusta Victoria and Mrs. Aaron Ward, these being placed in the order given.

New Parks for Nurnburg.—In order to relieve unemployment in Nürnburg, a comprehensive scheme of park and garden formation is being put in hand, and a sum of about 1,700,000 Rm. is being expended on new parks and open spaces for the town. This work, which was begun in 1923, includes the provision of a new park covering 150 hectares, comprising, among other features, an allotment settlement with 1,000 separate plots, and a sports ground with a stadium and swimming bath; besides which, woods, ponds and smaller open spaces will amount to another 150 hectares. About 110,000 Rm. will be spent on the two large municipal cemeteries, the remainder being used for the improvement of a number of existing open spaces, and for the formation of a suburban school garden and a nursery establishment.

An Epidemic Disease of the Oak.—At the recent meeting of the Edinburgh Botanical Society, Professor Montague Drummond, Glasgow University, presided, and Mr. Malcolm Wilson D.Sc., and Mr. John S. Waldie, B.Sc., submitted a communication on an epidemic disease of the Oak in Britain. During the past two years they had seen on Oaks in Scotland a disease which caused brown blotches on the leaves. Almost every leaf was affected, some of them so badly that they looked quite brown. The disease was caused by a fungus, Sclerotinia Candolleana, which had been grown artificially in the Botanic Garden laboratories where Oak plants had been infested, thus proving that the fungus actually caused the disease. One of the interesting points referred to by the authors was that they knew that the fungus was one which had been present in the country for a long time, but they did not know why it had suddenly attacked the Oak in this way. It was thought that it might be due to some unusual climatic condition in the past two years, but they could not tell what the condition was.

Hyeres College of Agriculture.—Placed first in a particularly brilliant competition, M. Duriez, special professor of Horticulture for the Eastern Region of France, resident at Nancy, has been recommended to the Ministry of Agriculture to succeed M. Foussat as Director of the College of Practical Agriculture and Horticulture at Hyeres. Four candidates for the post presented themselves, and M. Duriez is to be warmly congratulated on his success. He has greatly endeared himself to the horticulturists in and around Nancy during his stay among them, and they will much regret his departure.

Autumn Horticultural Exhibition in Vienna.—The recent horticultural exhibition in Vienna, the fourth of the present series of autumn shows, was extremely successful. The out-door portion of the show was a great improvement on previous ones, largely owing to the generous co-operation of the town garden (municipal) director, Herr Jakob Plohowitz. As was natural in Austria, tree nursery exhibits were greatly to the fore, notably that of the Hollandia nursery, consisting of Conifers, and evergreens of all kinds; fruit trees were also shown excellently by a number of firms. Garden plans were shown by several designers. From Schönbrunn came a fine exhibit of rare plants and flowers under the personal supervision of Herrn Fritz Rottenberger occupying the place of honor in the centre of the main hall; and the world famous firm of Gebhardt and Füssel staged a superb exhibit, including Lilies, Primulas, Cyclamens and Dahlias. An interesting feature of the exhibition was a pavilion devoted to municipal garden and park undertakings, in which the city of Vienna showed a number of interesting plans and photographs.

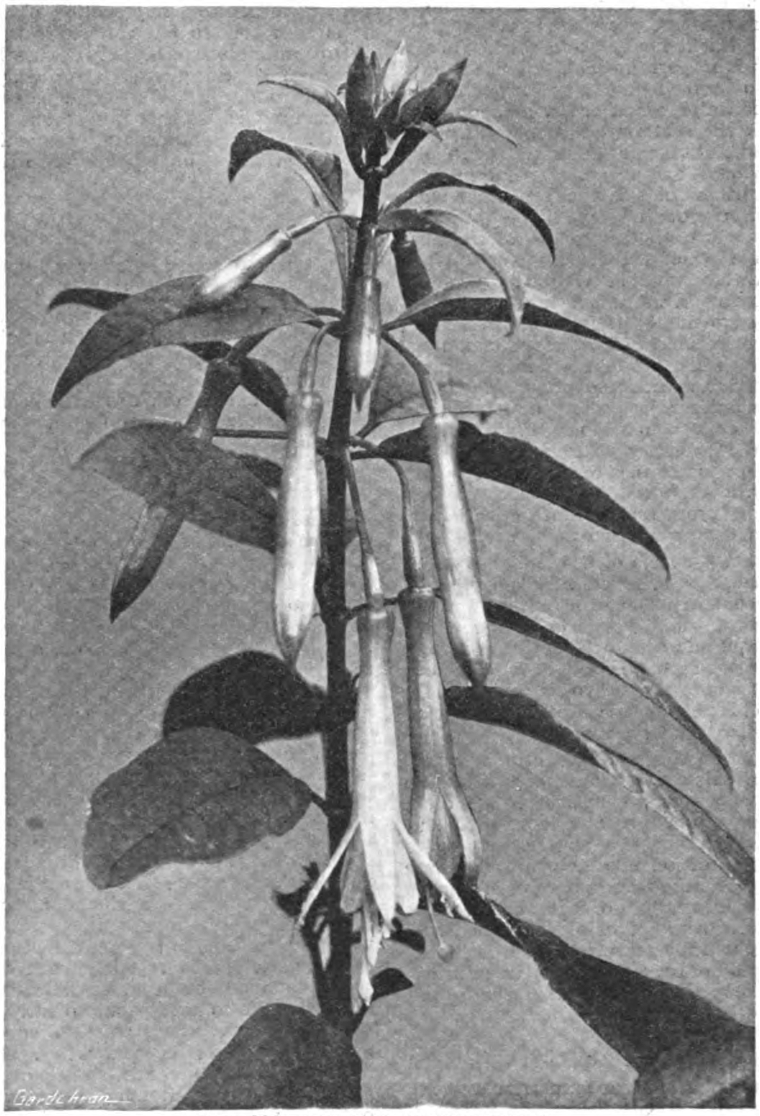


FIG. 189.—FUCHSIA SERRATIFOLIA.

(see p. 429).

Appointments for the Ensuing Week.—Monday, November 29: National Chrysanthemum Society's Floral Committee meets. Wednesday, December 1: Glasgow and West of Scotland Horticultural Society's lecture: Abingdon Horticultural Society's meeting; Wimbledon Gardeners' Society's meeting. Friday, December 3: Accrington and District Chrysanthemum Society's meeting. Saturday, December 4: Blackburn Horticultural Society's meeting.

"Gardeners' Chronicle" Seventy-five Years Ago.—*Garden Walls of Glass.*—Till Sir Joseph Paxton proposed his Crystal Palace, little had been done in the application of glass to garden structures beyond what had been in practice for half-a-century. The repeal of the excise duties had enormously increased the consumption of glass, and had caused its quality to be materially improved, but had led to no novelty of application. The combination of wood and iron, which was so happily hit upon in Hyde Park, has, however, now suggested to Mr. Charles Ewing, gardener to O. F. Meyrick, Esq., of Bodorgan, in Anglesea, the idea of constructing garden walls also of glass and iron only. The plan is to have iron uprights firmly fixed into the ground, and faced with glass on both sides, the space between the two faces being occupied by trees planted and trained in the usual way. The glass is all moveable, so that perfect ventilation, as well as prefect shelter, is secured. We hope to be able next week to give full details concerning this novel mode of construction, which seems likely to cause a complete revolution in the manner of managing plants under glass, provided, as we understand to be the case, the price at which the glass walls can be put up is less than that of common brick walls. Models of the walls will be exhibited next Tuesday, at the meeting of the Horticultural Society, in Regent Street, on which occasion an explanation will be offered of the peculiarities of Mr. Ewing's plan, and, we believe, some estimate of the actual cost. The Horticultural Society and several private persons have determined upon making immediate trial of the plan, so that we shall not have to wait long for results. *Gard. Chron., November* 29, 1851.

Publications Received. — *Carnations for Amateurs*, by J. L. Gibson, W. H. and L. Collingridge, 148-149, Aldersgate Street, E.C.1, price 5/6 post free.

The Week's Work.

THE ORCHID HOUSES.

By J. Collier, Gardener to Sir Jeremiah Colman, Bart., Gatton Park, Reigate, Surrey.

Zygopetalum.—The most popular species of Zygopetalum is Z. Mackayi, which blooms during the winter, and the flower spikes are now developing from the partially-developed pseudo-bulbs. When in full growth these plants require liberal supplies of water at the roots, but great care must be exercised in its application, as their thick, fleshy roots resent a sour compost. It is important that the soil should be allowed to become quite dry between each application of water, when sufficient should be given to soak the materials through. If these precautions are not taken at this stage the foliage will become spotted and unsightly. Z. crinitum, Z. Clayi and others of this type, together with Zygocolax Perrenoudii should be afforded similar treatment until the growth of the new pseudo-bulbs is completed. All the plants mentioned thrive well in a shady position in a house having an intermediate temperature. The dwarfer-growing species, including Z. Balliae, Z. rostratum and Z. Roeblingianum, grow well in a similar position. When applying water, it should be sprinkled over the Sphagnum moss on the surface in order to maintain it in a green, healthy condition. Plants of Z. maxillare and its variety Gauteri succeed best when grown on pieces of Tree Fern, on which they are usually imported. They succeed well when suspended from the roof-rafters and kept moderately moist at all times.

Bollea Section.—Plants of the Bollea section, which is sometimes included in Zygopetalum, including B. coelestis, Chondrorhyncha Chestertonii, C. fimbriatum, Pescatorea Lehmannii and P. Klabochorum are developing fresh roots and any necessary repotting may be given attention. These plants should occupy a moist, shady position in the house and never be allowed to become quite dry at the roots.

Epidendrum vitellinum.—The autumn-flowering variety of this species is a very attractive Orchid and very easy to cultivate. Its erect scapes of cinnabar-red flowers give a bright and pleasing effect during the winter. It grows best in a light position in a cool, intermediate temperature. When growing freely, it should be afforded liberal supplies of water at the roots until after the flower spikes are removed, and the pseudo-bulbs fully matured, when it should be given a period of rest, affording just sufficient moisture to keep the pseudo-bulbs plump and the roots healthy.

THE KITCHEN GARDEN.

By F. Streeter, Gardener to Lord Leconfield, Petworth Park, Petworth, Sussex.

Protection of Crops.—Owing to the mild, wet weather, winter crops are somewhat coarse and soft in texture, therefore careful watch should be kept, and immediately hard weather sets in, Bracken or long litter should be at hand to cover any that need protection, taking care to remove the material so soon as the severe weather is over. Autumn Giant Cauliflowers still bearing good heads should be carefully taken up and placed in deep pits. This will prolong their season by several weeks. Salads at the time of writing are very plentiful; we have Lettuces and Endives on south borders under lights. Young Onions growing in frames have, so far, needed protection on three nights only. Keep the soil stirred and dusted with soot in the frames containing seedling Cauliflowers that were recently pricked out and admit an abundance of fresh air to the frames at all times.

Parsnip.—This vegetable should be lifted from the ground as required, and to ensure supplies during frosty weather a sufficient quantity of roots should be lifted and stored in sand.

Jerusalem Artichokes.—The stems should now be cut down and the tubers lifted as required. Store the largest and best tubers in sand as recommended for Parsnips. The variety New White is much the finest sort and the best flavoured when cooked.

The Herb Border.—The present is a very suitable time for re-arranging and re-making the herb border. Cut off all untidy growths and thoroughly clear the border of weeds. See that the labels are in perfect condition. Replanting may be undertaken now on light soils, but in the case of very heavy, wet soils, this work is much better deferred until the spring.

Paths.—So soon as the wheeling of manure etc., is finished in any section of the garden, it is advisable to put the paths in order. In many gardens the paths may be greatly improved by turning the gravel, thoroughly watering it and rolling it level again. See that the drains are clear so that rain-water drains away freely. Place scrapers at convenient places to prevent soil being carried on to the paths.

HARDY FRUIT GARDEN.

By. W. Auton, Gardener to Viscount Elveden, Pyrford Court, Woking, Surrey.

Blackberries and Loganberries.—These Rubus fruits are most useful for covering old fences or buildings, and where new plantations are needed they should be planted now. They succeed in any position exposed to sunshine, and although they grow freely in almost any type of soil, good cultivation pays, and if the ground is well-prepared for them before planting the plants will remain productive for a number of years.

Orchard Trees.—Much may be done to assist old trees to retain their vigour and prolong their profitable life. Frequently old orchard trees receive little in the form of nourishment, and continuous cropping tends to exhaust the soil. In such cases some of the surface soil should be removed down to the roots, and a compost of rich, fibrous loam, rotted manure and coarse bone-meal substituted. This renewing material should be used in a rough condition and should be thoroughly consolidated. The pruning of old-established standard trees frequently receives little attention, and although regular cropping tends to keep the balance of the tree without much pruning care should be taken that there is no overcrowding of the branches. Moreover, the summer pruning of standard trees presents more difficulties than that of espalier and cordon trees or even bush trees, and is consequently much less practised, and it is generally necessary to give attention to the annual pruning during the dormant season. Such work entails considerable labour, often under difficult conditions, and it is wise to get it done so early as possible in the autumn, when weather conditions are less trying than in midwinter. A common fault with many orchard trees is overcrowding, and in some cases it may be necessary to cut out a few of the larger branches to allow light and air to enter the tree freely. It is important also that any cankerous branches should be removed. All saw-cuts should be trimmed with a sharp knife and have the surface dressed with tar on completing the work.

Staking.—It is important to give adequate support to all newly-planted trees. Small trees should be secured to stout, single stakes at the time of planting, but in the case of larger trees it may be necessary to secure them to three strong pegs in triangular fashion. If this method is adopted, the stem of the tree should be wrapped with soft material to prevent chafing of the bark. If wire supports are used a piece of old hose-pipe placed around the stem is an excellent safeguard.

Quince.—The fruit of the Quince is highly prized for preserving, and a few trees should be grown for this purpose. It succeeds almost anywhere but prefers a moist soil. The variety Portugal is good and distinct, with large, fine fruits, but the old Pear-shaped is more certain for general purposes, as it ripens its fruits earlier.

THE FLOWER GARDEN.

By F. C. Puddle, Gardener to Lord Aberconway. Bodnant, Taly-Cafn, North Wales.

Edgings for Shrub Borders.—Where beds or borders of shrubs are surrounded by lawns, edging plants are undesirable, but when they are adjacent to walks some form of edging is necessary. The usual grass verge is not always a success, for as the shrubs develop and overhang, the grass becomes thin and difficult to mow without injury to choice plants. A margin of dwarf shrubs or some other low-growing plant will generally be found more satisfactory; such edgings should be planted on fairly generous lines and broadened in places by running a few plants back into the bed to obviate formality, which would spoil the general effect. In sunny positions nothing is more suitable than the dwarfer Ericas, such as E. carnea, E. darleyensis, E. ciliaris and E. vagans. When the soil is free of lime the choice of suitable plants is widened, for many dwarf species of Rhododendrons make admirable margins for beds of taller shrubs. Kalmia glauca and the charming Leiophyllum buxifolium are also excellent for the purpose. Another fine plant for edgings in semi-shaded positions is Leucothoe (Andromeda) Catesbaei nana, whilst for shaded positions, Saxifraga umbrosa, S. u. var. serratifolia and Luzula sylvatica, the common Wood-rush may be employed as edgings either in the woodland or the garden proper.

Liliums.—The stems of the later-flowering species of Lilium having withered, any of the bulbs needing transplanting should be attended to at once, for the majority of Lilies commence to grow so early in the spring that moving them at that season is liable to give them a severe check; there is also a great risk of accidentally breaking the young growths during the process of lifting. Healthy clumps of Lilies should not be disturbed unnecessarily, but when the bulbs are crowded it is advisable to lift and divide them. Other Lilies may be suffering from soil exhaustion, and in their case it may be necessary to lift them for the purpose of trenching the bed. Seedlings of a flowering size growing in nursery beds should also be transferred to their permanent flowering positions forthwith. It is usual, when planting Lily bulbs, to surround them with sand, but this should not be overdone; an inch of sand at the base of the bulb is usually sufficient. If further drainage is necessary, it is better to lighten the surrounding soil by a liberal amount of sharp sand and leaf-soil, for it is too much to expect the roots to pass directly from a pocket of pure sand into a strong loam without suffering a check. If the situation is damp, it will be necessary to drain the whole bed, for good drainage is essential, and even the so-called swamp Lilies, L. pardalinum, L. Parryi, etc., will succumb in water-logged conditions.

Lilies for Beds and Borders.—It may not always be convenient to provide special beds for Liliums, but there are species of comparatively easy culture which may be accommodated in well-drained, sunny positions in flower beds or borders; these include:—L. chalcedonicum, L. elegans, L. pyrenaicum, L. regale, L. pomponium, L. candidum, L. testaceum and L. monadelphum Szovitzianum. L. tigrinum and L. Martagon will succeed under similar conditons, but they are, perhaps, happier in a half-shaded situation. Azalea beds and beds planted with dwarf Rhododendrons offer ideal conditions for Lilium auratum, L. Brownii, L. Hansonii, L. Humboldtii, L. speciosum and L. Willmottae. Lilium Parryi, L. superbum, L. pardalinum, L. parviflorum and L. Burbankii may also be grown in beds containing dwarf Rhododendrons, provided the soil is largely composed of leaf-mould and peat. Lilium giganteum is essentially a plant of the woodland and should be grown in soil containing a high percentage of humus. Slugs are especially fond of the succulent growths of this Lily, and it will be found a great help in warding off these pests if the bulbs are planted with at least two-thirds of their bulk above the surface of the soil.

FRUITS UNDER GLASS.

By T. Pateman, Gardener to Sir Charles Nall-Cain, Brocket Hall, Hertfordshire.

The Cold Orchard House.—The value of the cold orchard house cannot be over estimated after the vagaries of the present season, the protection afforded during inclement weather being sufficient to ensure a crop of fruits. I have registered so much as four degrees of frost when the trees have been in bloom, yet it failed to harm the crop, owing chiefly to the blossom being dry. Perhaps another gain is that the conditions can be regulated to suit the requirements of the trees. If the latter are planted out in borders any necessary replanting and root-lifting should have immediate attention. Trees in an unsatisfactory condition should be removed and others from the reserve stock planted in their places. In removing old, worn-out trees from existing houses, see that a quantity of the soil is removed also, and if any doubt exists with regards to the drainage it should be attended to. Borders with a gravel subsoil will need no artificial drainage, but in low-lying districts and in the case of heavy clay soils some provision for drainage should be made. When forming new borders the requirements of the various kinds of trees should receive attention; stone fruits will need plenty of mortar rubble or broken plaster incorporated with the soil. In lifting healthy trees, first make a deep trench about four feet from the bole of the tree, and gradually work the soil back with a fork, severing all roots that have penetrated into uncongenial soil, but taking every possible care of all fibrous roots. This completed, lay out the roots carefully in the new soil as near to the surface as possible, covering them with three to four inches of soil. Do not attach the shoots to the trellis until the soil has had time to settle. Keep the border in a moist condition, as the roots are more or less active throughout the year, but guard against overwatering or the soil will become sour before new roots have formed. The work of cleansing the trees and houses may be done any time during the winter and will find work for the staff during inclement weather.

Pruning.—If the trees were disbudded carefully, very little pruning is necessary in the case of Peaches, but it will be wise to look over the same for the removal of strong, unripened wood. Pears and Plums that have had all their growths stopped frequently during the growing season will require very little attention beyond thinning the spurs where they have become crowded. The shoots of Cherries should be kept pinched during their growing season to obviate pruning in winter, for the Cherry resents the knife at all times.

PLANTS UNDER GLASS.

By John Coutts, Assistant Curator, Royal Botanic Gardens, Kew.

Paeonia Moutan. — The many beautiful varieties of the Tree Paeony are excellent for greenhouse and conservatory decoration. So soon as they are received from the nurseryman they should be placed in suitable-sized pots and stood in cold frames until such time as it is desired to introduce them to a warm greenhouse. Plants imported from Japan, worked on stocks of P. Moutan, generally have very long roots, which render them difficult to place in ordinary-sized pots, but the roots may be shortened for the purpose. In the open these Paeonies are very subject to injury by late spring frosts, and they are well worth planting out in beds or borders in the unheated conservatory or greenhouse, as such houses afford ideal conditions for them. As the P. Moutan stock is very liable to develop suckers, frequent attention is necessary to keep the latter in check.

Begonia Froebelii.—Although this beautiful autumn- and winter-flowering Begonia was introduced from Ecuador about 1872-73, it is practically unknown to-day, which is surprising, considering how beautiful it is with its vivid scarlet flowers, which well-grown plants produce freely during the autumn and winter. This Begonia is easily raised from seeds; if the latter are sown early in the year the plants will commence flowering the following October. They will grow quite well in an ordinary greenhouse during the summer; seedlings raised the previous year will, if started early, flower during the summer.

Plumbago rosea.—Well-grown specimens of this plant are very useful during the winter for decorative work and are best suited to the intermediate house. This Plumbago has a long period of flowering, and the roots should be fed occasionally. As they pass out of flower they should be trimmed lightly and kept growing in a temperature of 60°. If the roots are afforded stimulants lateral shoots will develop, and these will give a good display later in the season.

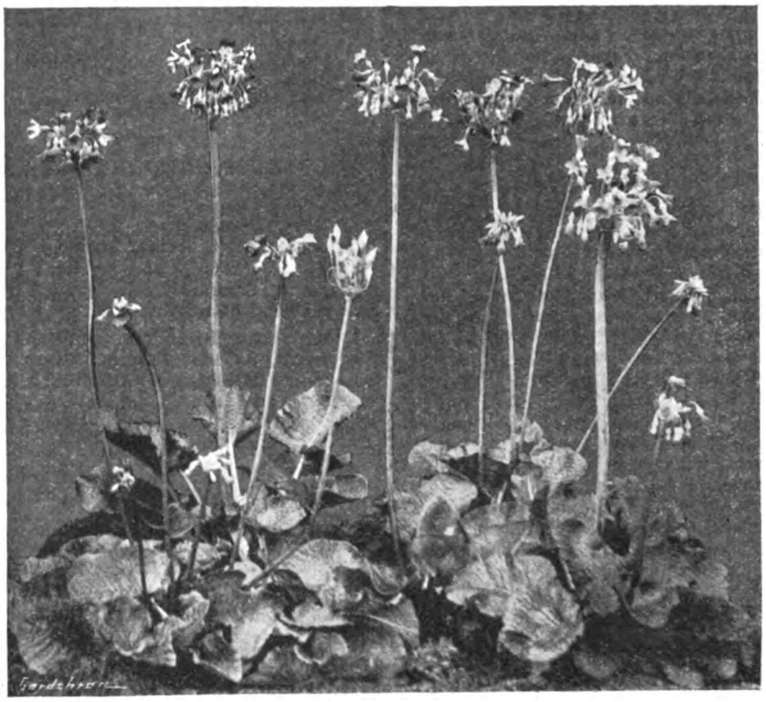


FIG. 190.—PRIMULA FLORINDAE.
(see p. 433).

FOR NORTHERN GARDENERS.

By A. T. Harrison, Gardener to the Marquis of Ailsa, Culzean Castle, Maybole, Ayrshire.

Seakale and Chicory.—Seakale crowns should be prepared for forcing, and after selecting the most suitable parts of the thong-like roots for next season's supplies of cuttings, the forcing crowns may be heeled in, so that they will be at hand when a further batch is required in the forcing room. Chicory roots should also be lifted and treated in a similar manner.

Lilium giganteum.—This giant Lily, while not to be despised in the garden proper, is most at home in open woodland, and in a good depth of fertile soil with plenty of leaf-mould should find an ideal home. The flower-stems rise to a height of eight or nine feet; they are very stout, and carry from six to twelve flowers of good size. The effect of a large group of this Lily is very striking when the plants are at their best early in July. The old flowering stems are now carrying many seed-pods, and if more stock is required, seeds form an easy method of increase if one has patience to wait until the tiny seedlings reach flowering size, which they will probably do in four or five years. A speedier method is to pull up the flower stems when they are nearly withered, pick out the numerous small bulbs varying from two to three inches in circumference and plant them in nursery rows. They will soon increase in size and may be expected to flower at least two seasons in advance of those raised from seeds.

Pruning Bush Fruits.—The various kinds of small fruits may now be pruned, and where young plants of any kind are likely to be required some of the prunings should be selected and tied into bundles, to be prepared later for insertion as cuttings. Each bundle should be labelled, and then heeled in at some convenient part, to be dealt with when time or weather permits. Where big bud mite and Gooseberry mildew are present on Black Currants and Gooseberries respectively, thin the bushes, so that spraying with lime-sulphur washes may be more readily performed when the time arrives for this to be done, which is usually during the early spring months. After the pruning is finished and all the refuse raked up and burned, manure should be well forked in between the rows, or if preferred, apply a dressing of basic slag at the rate of four ounces to the square yard, followed by about half that quantity of potash in the form of kainit. These two artificial manures have a beneficial effect on most bush fruits and are economical to use, both in regard to their cost and application.

Primulas.—All members of the Primula family usually grown in pots for flowering in winter, such as P. sinensis, P. malacoides and P. kewensis are flowering freely, and will be greatly benefited by a top-dressing of fine soil to which has been added a small quantity of a quick-acting fertiliser and a sprinkling of soot. The many forms of P. sinensis, including the stellata varieties, are valuable for winter-flowering, and very charming colours are now available. Among the P. malacoides section may be mentioned the two fine varieties known as Advance and Achievement, both being deeper in colour than the type, and with stronger and stiffer flower stalks. The yellow-flowered P. kewensis is rather later blooming than the foregoing, but, being of a perennial nature, it may be had in flower over a very long period. It is easily increased by division and comes true from seed.

HARDY FLOWER BORDER.

MERTENSIA PULMONARIOIDES AND M. SIBIRICA.

Perhaps the best of the Mertensias is M. pulmonarioides, which is sometimes known as M. virginica. Where the tender foliage is sheltered from keen winds of spring and damage by slugs, it forms a lovely plant. The smooth, emerald foliage, sheened with metallic lustres of blue, violet and bronze, is beautiful in itself, but when the exquisite china-blue bells are swinging on the slender, elegant stems, M. pulmonarioides has no rivals. When planted in a deep, rich, well-drained soil, which is always uniformly cool, this species is not a difficult plant, and once it has become established it proves a reliable perennial.

M. sibirica (syn. ciliata) is an easy species to cultivate, and possesses singular charm of foliage and flower. It makes a lush, leafy tuft, one foot in height, of smooth, emerald leaves, above which develop, on tall, slender stems pretty clusters of opalescent, rosy-blue, trumpet-shaped flowers.

M. sibirica is a perennial and will live long in any average border soil that is not too hot. It also seems to enjoy partial shade and generally yields a crop of self-sown seedlings. The dwarfed alpine form of this plant known as M. Drummondii (alpina) is a very choice and comely little plant, but it is seldom seen in gardens. *J.*

MORINA LONGIFOLIA.

Morina longifolia is an excellent border plant not too frequently seen in gardens. It is sometimes called the Whorl Flower from the arrangement of the flowers in whorls.

It is a bold and effective plant when isolated from other hardy flowers of about the same height, and looks best when arising from a low carpet of some dwarfer subjects. It grows about two-and-a-half feet high, and when seen planted as suggested it shows all its effectiveness. It has long, handsome, spiny-looking foliage, and from this arise tall stems bearing numerous whorls of flowers which are white, changing to rose. The flowers open in succession, and this gives variety of colouring, yielded by the gradual changes of the white flowers to rose, and adds much to the attractions of the plant.

The species is worth growing for the sake of its spiny foliage alone, but it is when in bloom that it attains the zenith of its beauty. It begins to flower in early summer and continues to open its long-tubed flowers for a considerable period.

I have seen a species named Morina Wallichiana, which appears to be even more attractive than M. longifolia, but this does not seem to be in commerce.

M. longifolia, which belongs to the Natural Order Dipsaceae, is best raised from seeds. It does not transplant well when of a large size, as it develops a long tap root. With care, however, even large plants may be transplanted with safety.

Seeds should be sown under glass in spring. Any good garden soil will suit M. longifolia, which is a native of Nepaul. *S. Arnott.*

PULMONARIA RUBRA.

This Lungwort is rarely offered in nurserymen's lists and is rarely seen in gardens, yet it is a species of singular merit. It is an early bloomer, like the rest of the genus, sending up in March many stout, branching flower stalks which bear a succession of blooms for at least two months.

In favourable seasons and planted in a good, fairly moist soil, these growing stems will be well over one foot in height. The flowers are about half-an-inch across, and of a bright cinnabar-red, a peculiarly striking and uncommon colour, especially in the more or less shady spots which the plant prefers. Furthermore, these blossoms, which have no trace of blue, are the same tint from first to last.

The leaves, which do not develop to their fullest extent until near midsummer, are very large, perhaps a foot or more in length and five inches across. They are dark green and bristly and have only the faintest indication of mottling, and that in their early stages. P. rubra is as hardy as any other species or variety and extraordinarily robust in health. *N.*

ANEMONE PULSATILLA.

The Pasque Flower is recorded from several stations in England and Wales, and there are some especially fine colonies in the western counties; it is found in dry, well-drained, calcareous soils in exposed situations, usually in poor grass-land.

It is never better than when generously massed and given immunity from disturbance. The leaves are pinnate, the segments many parted. The flowers are violet, sub-erect, with six sepals, spreading, externally downy and very pretty. The white, fluffy seed-heads are not the least attractive feature of this beautiful native species.

Seeds offer a ready means of propagation. Well-marked varieties are alba, lilacina, rosea, rubra, and dahurica, the last a dwarf form with very villose sepals. The variety rosea formed the subject of the coloured supplementary illustration in *Gard. Chron.*, January 25, 1913. *Ralph E. Arnold.*

IRIS GARDEN.

THE BEST BEARDED IRISES FOR CANADA.

As a result of trials held at the central Experimental Farm, Ottawa, Ontario, Dr. W. T. Macoun, the Dominion Horticultural Expert, considers the following to be the best seventy-five varieties of tall, bearded Irises:

White predominating on standards and falls.—Florentina, White Knight, Mrs. H. Darwin, Innocenza, Kashmir White and La Neige.

White feathered or suffused with bluish-lavender and bluish-purple.—Mrs. G. Reuthe, Camelot, Fairy, Ma-Mie and Anna Farr.

White, or white and purple standards and purple falls.—Rhein Nixe, Mary Williamson and Victorine.

Yellow predominating on standards and falls.—Mrs. Sherwin Wright, flavescens, Shekinah and aurea.

Pale yellow standards and violet purple falls.—Princess Victoria Louise, Loreley, Darius and Gracchus.

Yellow standards and brownish or maroon falls.—Iris King, Marsh Marigold, Knysna and Honourable.

Lavender-blue and bluish-purple predominating on standards and falls, mainly Pallida varieties.—Lord of June, Morwell, Queen Caterina, Eden Philpotts, Lady Chas. Allom, Ballerine, Albert Victor, Juniata, and dalmatica, where it blooms well.

Bluish-purple standards and bluish-purple or deep purple falls.—Lent A. Williamson, Alcazar, Crusader, Rodney, Amas (macrantha) and Magnifica.

Pale purple standards and purple falls.—B. Y. Morrison, Perfection, Walneri, Salvatori.

Purple standards and purple or dark purple falls.—Dominion, Souvenir de Madame Gaudichau, Parc de Neuilly, Archeveque, Monsignor, Kharput and Black Prince.

Pink, lilac and rose predominating on standards and falls.—Mlle. Schwartz, Dream, Delight, Mrs. Alan Gray and Queen of May.

Reddish purple predominating on standards and falls.—Asia, Sweet Lavender, Mount Penn, Caprice, Lohengrin, Anne Leslie, Opera and Medrano.

Dusky or dull coppery standards and rich maroon falls.—Ambassadeur, Deuil de Valery Mayet, Prosper Laugier, Jacquesiana (Jacquiniana), and Nibelungen.

Buff, lilac and fawn blends predominating on standards.—Afterglow, Isoline, Dejazet, Dora Longdon and Sherbet.

BULB GARDEN.

BRUNSVIGIA JOSEPHINAE.

Having recently become possessed of half-a-dozen large bulbs of this plant, I was naturally interested in the note on page 369, and would like just a little more information than is contained in that article. It is stated there that "Brunsvigias have a period of growth and a period of rest: after the latter period they should be allowed to start into fresh growth without stimulation." What, in this country, under greenhouse conditions, would be their period of growth nominally, and what period of the year should they be rested in order to flower them in a satisfactory manner?

I may add that the bulbs of Brunsvigias arrived here in an absolutely dry condition about midsummer, and were placed singly in ten-inch pots, since when they have made a few leaves and so far show no signs of ripening to indicate that their "dry" period is at hand. *A. T. Harrison.*

STERNBERGIA LUTEA.

This pretty, autumn-flowering bulb is even better than many of the autumn-flowering Crocuses, and, having more substance in the flowers, it withstands a greater amount of inclement weather, which invariably destroys the more delicate flowers of the Crocus.

Sternbergia lutea should be planted after the bulbs are thoroughly ripened, in sandy loam, with plenty of drainage, in a sunny position. Imported bulbs are often small and cause disappointment in not flowering for the first season or two. They should be left undisturbed, and will flower freely every year after they have attained their full size.

Sternbergia lutea is known as the "Lily of the Field," and by some is supposed to be the Lily referred to in the Bible. It is a welcome plant with its bright, yellow flowers during the short days of autumn, for a sunny nook in the rock garden. *F. W. G.*

ROSE GARDEN.

MOSS ROSES.

The Moss Rose is supposed to have been introduced from Holland in 1596. The plants are not very vigorous in growth, but, as a rule, they all succeed as dwarfs, especially if on their own roots. High cultivation, close pruning, a warm, dry soil and an annual dressing of farm-yard manure are their chief requirements. They do not thrive in wet, cold soils, therefore, land of this nature should be well-drained and made friable. The following varieties will be found useful to form a bed: Crested Moss, introduced by Vibert in 1827. The flowers are pale rosy-pink, the buds beautifully crested, very handsome and distinct. This delightful old Rose makes a lovely vase flower.

Blanche Moreau is a beautiful white sort, with a full crest of moss around its bud. It is not quite so free in blooming as White Bath; nevertheless, it is a very choice flower. Lanei is a bright, brilliant rose-coloured variety with a round, handsome, mossed bud. It was introduced by Laffay in 1845, and is one of the best Moss Roses of its colour grown.

White Bath has large and full, beautiful, paper-white flowers; it was introduced by Salter in 1810. Little Gem is a miniature Moss Rose, forming compact bushes, densely covered with small, crimson, double flowers, beautifully mossed. This Moss Rose will be found useful for furnishing small beds. Gloire des Mousseuses, introduced by Laffay in 1852, is a pale rose variety, the outer petals whitish. It is a most distinct and beautiful Moss Rose.

Princess Alice, introduced by Paul in 1853, is blush with a pink centre. The plant is of good habit and makes moderate growth. Other good varieties are Perpetual White; Salet, rose, (Lacharme, 1854); and Mme. Edouard Ory, rose, (Robert et Moreau, 1854). *G. L.*

TREES AND SHRUBS.

FORSYTHIA.

In spring, when flowers are scarce in gardens, good bushes of Forsythias in bloom have a very pleasing effect. Single specimens suitably placed on sheltered lawns or in shrubberies where there is plenty of room for them to develop are greatly appreciated when in bloom.

These plants grow best in loamy soil of medium texture, with a little leaf-soil or sweet decayed manure added. If the soil is heavy in texture the stations should be prepared carefully and the drainage given extra attention.

The plants are easily increased from cuttings planted in cold frames or under hand-lights, in autumn, in soil of a sandy nature made moderately firm. If the cuttings are removed from the old plants, with a heel, they will root readily. The two best garden species are F. suspensa and F. viridissima; the latter flowers later than the former, which may be regarded as the superior of the two. There is a hybrid between these species known as F. intermedia, and several varieties of it are known, the best being the dark, yellow-flowered vitellina. *H. Markham.*

SPARTIUM JUNCEUM.

This is a valuable shrub for dry, poor soils, bearing erect spikes of bright yellow, fragrant flowers during August and September, when most of the other shrubs are over. It is a thin-growing plant with Rush-like shoots which have so few leaves that at a distance they seem leafless. If allowed to develop, it will grow into a straggling bush, six feet to eight feet in height, but the best results are attained if annual pruning is adopted by removing the old flowering shoots.

This shrub is perfectly hardy and comes freely from seeds, which should be scattered where the plants are intended to grow; it is a useful plant on light, sandy soils near the sea. *F. W. G.*

ABIES FORRESTII.

This brilliant tree is, in my opinion, the best of the Silver Firs introduced during recent years. It came to me labelled as Abies Delavayi, but clearly it was not that species, so I wrote to the late Sir Isaac Bayley Balfour, of the Royal Botanic Garden, Edinburgh, asking him if he would be kind enough to identify it, as he had had the naming of the introductions made by Forrest during the Bees' expedition to China in 1909-11. Professor Bayley Balfour very kindly undertook to work out the species and eventually named it after its discoverer, Mr. George Forrest.

I have from eighty to one hundred specimens of Abies Forrestii at Stanage Park, and one of these is referred to in Mr. Dallimore and Mr. Jackson's *Handbook of Coniferae*, and this is the one illustrated in Fig. 191. In 1923 it had attained a height of fifteen feet eight inches. Unfortunately I have lost several examples of A. Forrestii owing to attacks of Agaricus melleus. *C. Coltman Rogers, Stanage Park.*

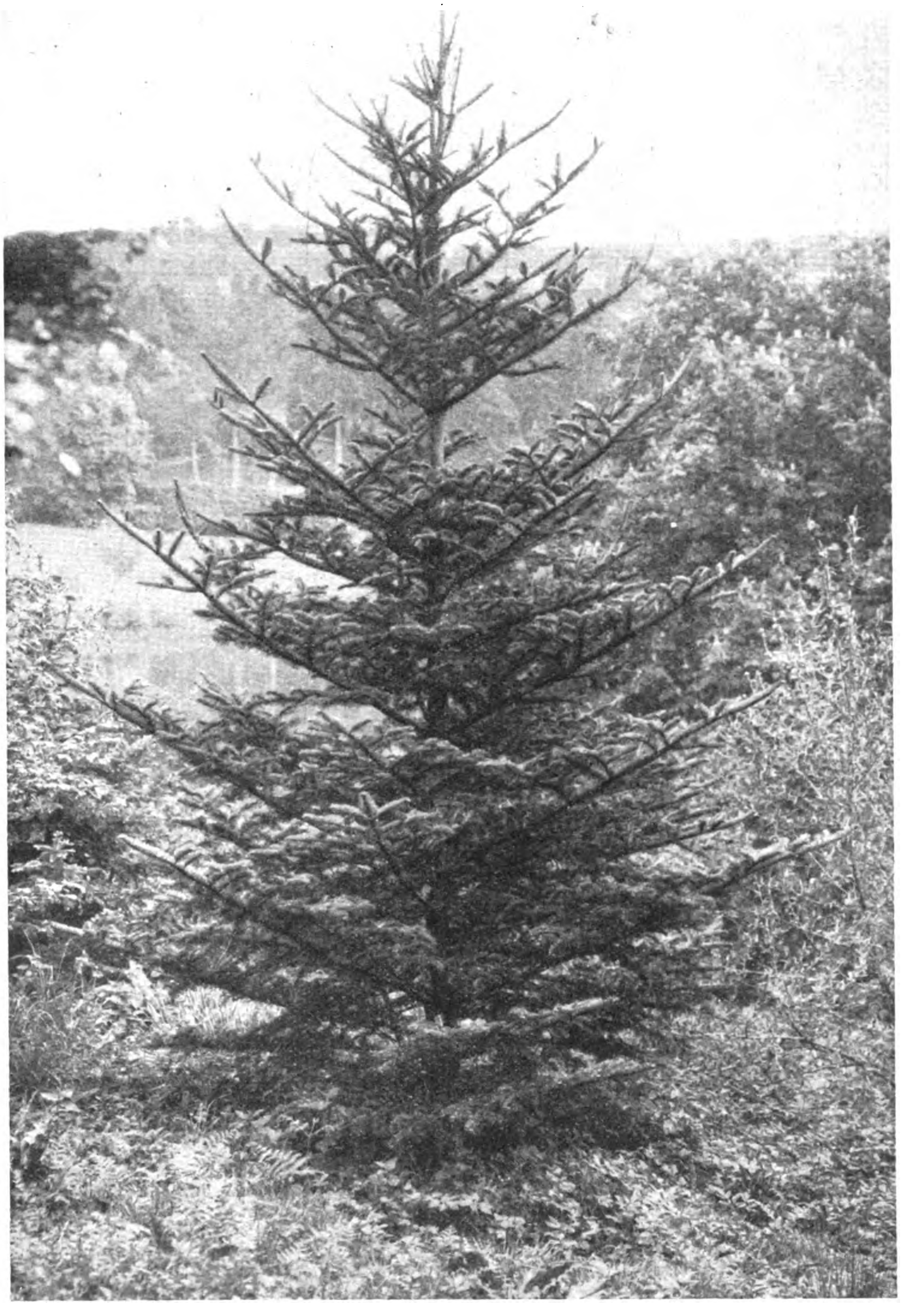


FIG. 191.—ABIES FORRESTII.

SAXIFRAGA COTYLEDON VAR. CATERHAMENSIS.

It is always interesting to know the origin of any good garden plant, so be it known to all rock gardeners that they are indebted to Mr. Ingwersen for the launching of that splendid Saxifraga, S. Cotyledon var. caterhamensis. The plant was raised by a clever amateur alpinist in his garden at Caterham, in Surrey, and from him Mr. Ingwersen secured a stock. I am under the impression that S. c. caterhamensis occurred as a chance seedling rather than as the result of a deliberate cross, but whether it cropped up self-sown as well as self-crossed or whether seed was harvested and sown by the raiser, I cannot say. Perhaps Mr. Ingwersen or the raiser will enlighten us on this point. But, however it was, S. C. caterhamensis is an introduction of first-rate importance.

Everyone knows the type, S. Cotyledon, with its great green rosettes and arching sprays of white blossom. A most noble rock plant, with the added virtue of being rediculously easy to grow. Any reasonable soil suits it, and one may grow it in sun or in partial shade. Like all the Silver Saxifrages, it is a rock-dweller, a haunter of cliffs, and in its wild, native state its habit is to throw out its splendid flower-spikes more or less at an angle from the rocks to which it clings; the rocks being more or less vertical the flower spike leans out more or less horizontally. To get the best and most natural grace from this or any other Silver Saxifrage the gardener should plant it on some slope or miniature cliff from which the flower spikes may lean as they would in nature. The plant loses half its charm if planted on the flat, or on the top of a mound, instead of in the mound's side.

The type, S. Cotyledon, is a remarkably fine plant. Its white blossoms are lightly freckled with a score of small red spots at the bases of the petals. Two distinct forms have been for long in cultivation, viz., S. C. pyramidalis and S. C. icelandica. The former is rather more regularly pyramidal in the shape of its flower spike, and the flower stem is more decidedly clothed with reddish, glandular hairs, whilst S. C. icelandica produces giant sprays which, when well-grown, develop to magnificent proportions. The outstanding characteristic of S. C. caterhamensis is that each petal is barred, near its base, with a brilliant band of red spots, so large and so close together as to give the effect of a band of pure, solid red. This gives the flower spray a most distinctive appearance, and marks the plant out at once as far and away the handsomest member of the clan. It is not a case of an obscure difference which the enthusiastic alpine specialist has to point out to the novice before he can see any difference. No! S. C. caterhamensis is the sort of alpine which might stop a Dahlia specialist in full career, pull him up with a jolt, and set him dreaming of a race of Saxifraga-flowered Dahlias!

All the Saxifraga Cotyledon varieties make excellent pot plants, and thus grown are most beautiful for bringing into the house, where they last in flower in a most satisfactory way. The variety S. C. pyramidalis is the form most commonly used in this method of culture, and well-grown plants have for long been produced by growers for the flower markets. The process is quite simple and is well worth the attention of any amateur who has an alpine house or a cold greenhouse. The best time of year to start is in spring, and the best plants to start with are young, well-rooted specimens. If these have more than one rosette the strongest should be selected on each plant, and, preserving them, all side rosettes must be removed. As the season advances the plants should be potted on into larger and larger pots using any good porous, fairly rich potting mixture. It matters little if they are kept in the cool house or in the open air. Personally, I prefer the latter. The crowns will, if well-cultivated, develop in a surprising way, responding readily to an ample diet provided there is no competition from side rosettes. When the latter appear they should at once be removed. By autumn the plants should be in six-inch pots, well filled with roots, and the rosettes may be anything from nine inches to twelve inches across. In the spring they should again be well cultivated, kept growing, and carefully watered, and by the end of May they should be in flower. Spikes three feet long may be grown easily in this way, making graceful, arching sprays of hundreds of white blossoms.

Care must be taken whilst the flower spikes are developing that the plants are not turned round this way and that, or the sprays, starting to arch in one direction, will, when the plant is turned, begin to arch across in another direction, and a crooked, deformed stem will result.

S. C. caterhamensis lends itself particularly well to pot culture, and apart from its richly-marked flowers, is capable of throwing giant sprays which are really a remarkable reward for so simple a course of culture. *Clarence Elliott, Stevenage.*

ALPINE GARDEN.

HELIANTHEMUM ALYSSOIDES.

This is, without a doubt, the best of the Sun-roses with yellow, unblotched flowers. It is a most prolific bloomer, flowering with scarcely a break throughout the season.

The flowers are large and of a fine, rich yellow; the habit close and neat, and the downy, pale green leafage always attractive.

H. alyssoides never seems to grow lanky and straggly as H. formosus, H. halimifolium and H. algarvense are apt to do. All it needs is an occasional removal of the spent flower stalks and a sunny situation in poor, stony soil, preferably on a slope. In spite of its good qualities, this species is not generally well-known in gardens. Here, it occasionally produces self-sown seedlings. *N. Wales.*

LEONTOPODIUM ALPINUM.

The Edelweiss is very easily managed in the rock garden, provided it is planted in a deep, well-drained, gritty soil on exposed, sunny parts of the higher reaches. Its greatest enemy is excessive damp, so that it is wise, during the winter, to cover the plants with a hand-glass or a sheet of glass.

A colony of this typical alpine plant forms a very distinctive feature, the terminal flower-heads, enveloped in woolley bracts, being quite distinct from those of any other Composite.

Division or seeds offer means of propagation, and for seeds to reach maturity in this country, a warm and dry summer is necessary.

Two or three other Leontopodiums are sometimes given specific rank, but they are probably geographical forms of L. alpinum. *Ralph E. Arnold.*

MARGYRICARPUS SETOSUS.

This plant is suitable for draping a fairly large rock, or for growing on a retaining wall, for it is a pretty, evergreen, creeping subject.

The greenish, axillary flowers are small and inconspicuous, and if they were the only attribute this plant would long since have ceased to be an attraction to gardeners. However, as the common name of Pearl Berry suggests, its snow-white berries constitute the chief attraction. These are generally solitary and formed in the axils of the leaves; as the latter are dark green, the contrast is very pleasing.

M. setosus is a native of Chili. In the rock garden congenial and suitable open positions may easily be found where its unique and distinct characteristics would be an acquisition to the most up-to-date collection of plants. It will thrive in a mixture of loam, leaf-mould and sand, and is readily propagated from cuttings in July and August. *B.*

THE ORNAMENTAL EFFECT OF CERTAIN VARIETIES OF APPLES AND PEARS.

On the whole, the autumn colouring of trees and shrubs has not been so effective this season as is usually the case in these gardens. Some Barberries and Cotoneasters, although somewhat late in colouring, are much better than was anticipated at first, but certain Pears, the foliage of which is usually brilliantly-coloured in autumn, have been an absolute failure this year in this respect, not one of them showing the least sign of colouring. The reasons for this are not clear; probably rainfall is a factor, but at what season is doubtful. The past late summer and early autumn have been very dry, whereas in the year 1924, when the corresponding period was wet, the colouring of the Pear foliage was almost as poor as in the present season. Again, a possible factor is the effect of early frosts.

The leaf-fall of all trees was somewhat later than usual this autumn. Some forest trees at this date (November 8) have coloured remarkably well.

The following notes are confined to the ornamental effect of Apples and Pears, particularly the autumn colouring of Pear foliage, and its behaviour, during the past few years at Wisley.

Besides being of economic value, there are several varieties of Apples and Pears which are useful as decorative trees, either from the beauty of their flowers or from the brilliant colouring of their leaves in autumn. Although all Apples and Pears may be considered beautiful trees when in bloom, there are several which are outstanding in this respect, and they are worthy of a position in the more decorative parts of the garden.

Taking the question of flower first, Apples possess a wider range of colouring than is found in Pears. The following are a few of the best sorts from the flower point of view. Arthur Turner is one of the most showy varieties in flower; the blossoms are an attractive, deep-pink colour seldom seen in Apples. It is a variety of comparative recent introduction and quite a serviceable cooking Apple during November and December. Sandringham bears exceedingly pretty, deep pink flowers, a little later than the variety referred to above. This is another culinary variety of fair quality, upright in growth, and a little later in season than the first mentioned.

The popular Irish Peach is particularly attractive when in bloom. Its method of fruiting demands little or no pruning, and the natural, graceful habit of the tree is thus preserved.

Rivers' Early Peach bears large flowers of a pale pink. This variety is not a robust grower and makes a neat, upright tree. Although inferior to Irish Peach, it is, nevertheless, very acceptable, being one of the earliest varieties to ripen its fruits.

The well-known variety Lord Derby is very pleasing when in flower and, in addition, it is one of the most useful of culinary Apples.

When carrying a good crop of bloom, Gravenstein is a splendid sight, bearing very large flowers of palest pink. A dessert variety of outstanding merit, it is, unfortunately, a rather shy cropper. One of the most attractive varieties in flower is Nelson Codlin, a culinary Apple which keeps until the end of the year, but otherwise it is not a very desirable variety to cultivate. There are several others deserving of mention, but those referred to are considered amongst the best.

With Pears, there is very little variation in colour of bloom; all varieties possess more or less white flowers. A few are rather attractive in the bud stage by being tinged with pink, probably the best being Belle Julie. A few are more attractive than the rest by having larger flowers, of which Jargonelle is a good example. A standard tree of this variety makes a striking picture when in full bloom. Another large-flowered variety is Pitmaston Duchess, although it is not so pleasing as Jargonelle. The stewing variety Catillac is also deserving of mention; its grey-green leaves unfolding at the time of flowering, give it a distinctive appearance.

In the matter of autumn foliage there is little effect to be found in Apples, but Pears are very prolific in this source of beauty. From records kept at Wisley over a period of ten years it has been found that certain varieties of Pears can be relied on to give a brilliant display in those seasons when colouring is general, while others have been remarkably good in certain seasons only. As already stated, the only recent exception to this rule is the present season and the year 1924, when for reasons not yet ascertained, there was not one variety worth considering for its autumn foliage. Whether colouring is a varietal factor, or depends upon the health of the tree, or on climatic and local conditions, it is difficult to determine. These Pears are growing on a north-east slope, the soil being a rather cold, heavy loam.

The colours include crimson, red, copper and yellow shades, although the two last-mentioned are in the minority. Colouring is not simultaneous, as different varieties lose their leaves at various periods. During 1925, one of the first to become coloured was Fertility; this was on September 15, and one of the latest was Souvenir du Congrès, which had lost its brilliance by October 20. In good weather the colouring in each variety usually lasts from ten to fifteen days. The most dependable varieties to colour are Fertility, Colmar d'Ete, Triomphe d'Vienne, Thompson's, Beurré Jean Van Geert, Durondeau and Souvenir du Congrès.

The following are a few varieties which are not so consistent in their colouring as those already mentioned, but they were really most effective in the years when they did take on colour: Beurré Capiaumont, 1914, 1918, 1919, 1921, 1925; Huyshe's Victoria, 1914, 1919, 1922, 1923, 1925; Passe Colmar, 1914, 1919, 1921, 1922, 1923. One of the best coloured varieties during 1925 was Marie Louise d'Uccle, but only during the years 1914 and 1919 was this variety worth noting. Of the yellow shades Autumn Nelis was the most pleasing during 1925, also during the years 1921 and 1922.

Records were not taken during the years 1915-16-17. Other readers may have found these or other varieties colouring in their own locality, and it would be interesting to have their views on this subject. *J. Wilson, Wisley.*

INDOOR PLANTS.

FUCHSIA SERRATIFOLIA.

Fuchsia serratifolia (Fig. 189) was introduced from Peru in 1844, but was known in the eighteenth century. It is a tender plant which, however, will do quite well out-of-doors in favoured localities; for instance, it flourishes in the Tresco Abbey Gardens, Isles of Scilly, where it reaches a height of eight feet to ten feet. The leaves are dark green but not so much toothed as the name suggests; the long flowers have brilliant crimson tubes fading into pale green at the tips of the sepals; the petals are orange-red. The plant grows rapidly and flowers freely when planted out in summer, and if lifted it will continue to flower during the winter months. It is easily propagated by cuttings. *William Lawrence, Burford Lodge, Dorking.*

MOSCHOSMA RIPARIUM.

This beautiful greenhouse flowering plant belongs to the Natural Order Labiatae and, like many members of that Natural Order, the foliage is characterised by a powerful, but in this case not unpleasant, odour. It is a native of South Africa, and one of its greatest merits lies in its blooming from early December until well into February. The tiny flowers are creamy-white with purple anthers, and are borne on long, branched, terminal panicles, often two feet or more in length.

Although naturally a perennial, it is better to raise fresh plants from cuttings each year. The cuttings may be inserted in April, and they root very readily in a mixture of leaf-mould and loam with a good proportion of sharp sand.

When rooted, the plants should be potted singly in three-inch pots, and so soon as they become established, they should be hardened off and placed in a cold frame.

About the beginning of June, they should be potted for the final time, using five- or six-inch pots, and returned to the frames.

Admit plenty of air and pinch out the tops of the shoots a few days after the final potting. The resulting laterals should also be stopped to promote a bushy habit.

Feeding may be commenced in September and the following month the plants should be removed from the frame and placed in a light position in a cool house. On no account should they be coddled.

A splendid effect is obtained by associating well-grown plants of this Moschosma with early Daffodils.

After flowering, the plants should be cut back and placed in a light position in a warm, moist house, to induce them to make strong, healthy growths, suitable for use as cuttings. *T. H. Everett.*

GEUMS AS POT PLANTS.

The lovely scarlet Geum, Mrs. Bradshaw, and its yellow counterpart, Lady Stratheden, may, if treated carefully, be had in flower under glass by the end of April, and as the flower stems are about eighteen inches high, the plants are very light and graceful.

Secure strong crowns, choosing plants of a spring sowing of each variety, and pot them in five-inch pots filled with rich, yellow loam. Use plenty of draining material and pot fairly firmly. Place the plants in a cold frame, where they may be allowed to remain until towards the end of February. At that date they should be introduced to a house having a temperature not higher than 50°; if necessary, they may be grown in a higher temperature after growth commences. The flower stems will need supporting, and very thin twigs should be used for the purpose. Admit plenty of fresh air, and water the roots with more than ordinary care. *J.*

NEW HYBRID ORCHIDS.

(*Continued from October* 30, *p.* 353).

Name.	Description.	Exhibitor.
Brasso-Laelio-Cattleya Ambersolis...	B.-L.-C. Amber × C. Sunbeam	Baron Schröder.
Cattleya Adgina	Regina × Adula	Mrs. Bruce and Miss Wrigley.
Cattleya Althea	Mrs. Myra Peeters × Lady Veitch	Cowan & Co.
Cattleya Fragrans	St. Gilles × Hardyana	Sir J. Colman, Bt.
Cattleya Mantua	Mantinii × Marstersoniae	Mrs. Bruce and Miss Wrigley.
Cattleya Marlow	Jasper × Warscewiczii	Black & Flory.
Cattleya Sunbeam	C. Maggie Raphael alba × C. Yellow hybrid ...	Baron Schröder.
Cypripedium Stephan	Stephanos × nitens-Leeanum	Sanders.
Laelio-Cattleya aesthetica	L.-C. Helene × L.-C. Appam	Sir J. Colman, Bt.
Laelio-Cattleya Dazzle	C. St. Gilles × L. xanthina	Sir J. Colman, Bt.
Laelio-Cattleya Entre Rios ...	L.-C. Buenos Aires × C. Tityus	Dr. M. Lacroze.
Laelio-Cattleya Pamela	C. Princess Royal × L.-C. Feronia	Cowan & Co.
Odontoglossum Cassandra II ...	Princess Yolande × St. James	Charlesworth & Co.
Odontoglossum Stanley Baldwin ...	Vuylstekeae × percultum	Cowan & Co.
Sophro-Cattleya Flame	S.-C. Doris × C. Iris	Stuart Low & Co.

ORCHID NOTES AND GLEANINGS.

CYPRIPEDIUM GUTTATUM.

Among the hardy Cypripediums few, if any, have so wide a geographical distribution as C. guttatum (Fig. 192). It has been found from Moscow to the Ural Mountains, through northern Asia to Kamschatka, Manchuria and in the mountains of China, southwards from Peking; it crosses the Behring Straits to the Aleutian Islands and Alaska, continuing eastwards to northern Canada where, according to the *Botanical Magazine*, it was found at Franklin by Richardson during Franklin's Arctic travels. Not less wonderful is its latitudinal distribution from close to the Arctic circle in north-east Asia to so far south as the Tibetan province of Chumbi; it has been collected between Sikkim and Bhotan.

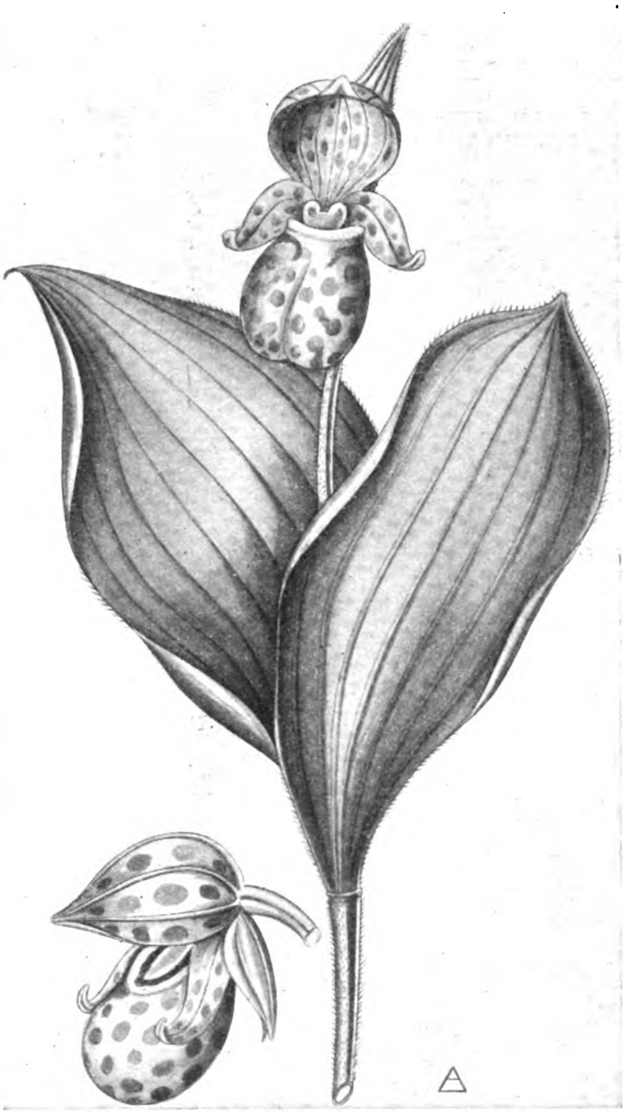


FIG. 192.—CYPRIPEDIUM GUTTATUM.

The late Mr. H. J. Elwes grew C. guttatum at Colesborne, Gloucestershire, and he himself brought home plants from the Altai Mountains, where he found it growing in dense forest of Pinus Cembra, on the west shore of Lake Teletskoi.

C. guttatum seldom grows above twelve inches high, and its stems bear a pair of broad, green leaves and are surmounted by a solitary white flower peculiarly marked with purple. The hooded dorsal sepal and the inflated lip are of similar size, and from the top of the former to the end of the latter measures about one-inch-and-a-half. The golden-yellow sterile stamen on the column is a distinct and pretty feature of this interesting terrestrial Orchid.

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TWENTY DAYS IN A BOTANIST'S PARADISE.

AMID the dreariness of the Namib desert, which extends from Luderitsbucht southwards to the mouth of the Prange River, there lies a group of steep hills, bluish-black as seen from a distance, and covering an area of about seventy square miles. These are the Klinghardt Mountains, concerning which a friend, Dr. Schafer—surgeon on the railway line, Luderitzbucht-Aus.—had told me wonderful tales of Mesembryanthemums, Cotyledons, Crassulas, Stapelias, splendidly-flowering Composites and a host of other remarkable plants which he said occurred there in stupendous variety.

After the war, I prepared to get back, for a shorter or longer period, to my adopted country, where I botanised from 1897 to 1914, almost without competition. Although my herbarium, botanical library and household furniture were in South-west Africa, I could not undertake the journey until the South-west African Government kindly granted railway travelling facilities for myself, three boys, my oxen and oxen-waggon on long distances and, by the generosity of the Directors of the Consol Diamond Mines, I was granted permission to travel everywhere undisturbed within the limits of the Company's territory, which included the Klinghardt Mountains.

Eventually we arrived with about five days' water supply, as the Company's enormous territory is waterless desert, containing upon several thousand square miles only half-a-dozen water places, of which only Alicetal (near Pomona) has really drinkable water. The rainfall during the year is about half- to one inch! How is it possible under such conditions that the reddish, sandy plains are thickly sprinkled with sulphur-yellow Grielum, rosy-purple Sarcocaulon spinosum, buff-coloured Dimorphotheca sinuata, blue Nemesia, sweetly-scented Matricaria albida, the charming sky-blue Heliophila arenicola, bulky, big-headed Didelta carnosa and a hundred more other lovely flowers?

A long strip of sand mingled with black phonolitic stones is covered with erect, woody shrubs of a Zygophyllum, the six feet high, erectly-branched brooms of the bluish-green Euphorbia gummifera—of which a single specimen covers about six to ten square yards—and with the six-feet-high, leafless, squarrose, Salsola Zeyheri and S. aphylla. How are these shrubs enabled to live without rain, without ground water and without reserve organs, such as tubers or swollen trunks? We shall see presently.

We four human beings were—besides the vegetation around and a few beetles and geckos—the only living things to be seen in this land of deadly silence. As night approached a good heap of dead Zygophyllum and Salsola wood, gathered by the boys, was kindled, the big tea-kettle stood amidst the flames, and blankets spread out over the sand. There was no danger from flies because no warm-blooded quadrupeds live here, such as antelopes, zebras and cattle. The absence of this pest means peaceful sleep. Our meals were very simple, consisting of bread with delicious sheeptail fat, boiled ostrich egg and tea whitened by sugarless Ideal milk. Of these articles and of sugar, Rice, Tobacco and matches, we had much more than necessary for a stay of about twenty days, and we knew that so long as we stayed none would disturb us.

Towards morning the air becomes rather chilly; my thick, upper blankets are dew-drenched. One after the other we draw nearer to the fire and drink hot tea. The sun rises behind a row of four black, steep hills which have their bases concealed in the clean, yellow, soft quartzitic sand and are covered on the south-west, so high as the passes between them, by "stranded dunes," as geologists call them. The opposite side of the valley is formed by a lower ridge of very steep hills. White quartz is only seen as a big heap of enormous blocks sixty feet high. Just behind our camping place is an almost perpendicular wall of porous, pebble-studded limestone—the so-called "desert-chalk."

There is only one place within the boundaries of the mountain group where there is a possibility of water collecting. It is a circular "vlay," from one to two acres in extent, with a perfectly horizontal bed of stiff, grey clay, situated at the foot of a steep, roof-like slope. We found this wet clay-bottom covered by thousands of the most insignificant Althaea Ludwigii, Lin., and an annual Mesembryanthemum with minute, pale, rosy flowers. The vegetation of the loosely-sandy plains is of astonishing variety, and I had come just when it showed itself in the most favourable condition. The Scrophularias are abundantly represented. Manulea Benthamiana with its modest, pure-white Forget-me-not flowers, sometimes covers a spot of a few hundred square yards or so.

Sutera tristis, Hiern, with spikes of yellow-greenish flowers; livid-coloured Nemesia with a strong Heliotrope-like fragrance, and also a canary-yellow one; a dark, Cherry-red Manulea, two Hebenstreitias, several Phyllopodiums and Polycarenas adorn these seemingly sterile sands, together with many Composites, such as the golden-rayed Ursinia annua and a smaller-headed kind; a splendid sky-blue Amellus; the fleshy, large-headed, golden Didelta carnosum; Venidium Wyleyi, Dimorphotheca sinuata, the white-rayed Gazania varians, the blue-purple Senecio cakilefolius, a goodly number of insignificant Helichrysums and others.

Of Liliaceous and Amaryllidaceous plants, there are very few and these inconspicuous nevertheless, interesting species were found such as Anthericum glutinosum, Dtr., with sticky and consequently sand-clad leaves; another with extraordinarily broad leaves and curiously downward-bent pedicels of the fertilised flowers. A third one has roots running close below the surface of the sand, and each of the thin, thread-like roots had four to five oval tubers of the size of a Hazelnut—a wonderful arrangement for collecting the dew water which enters only one to two inches deep. Upon a stranded dune we collected a frutescent Ursinia, and the erect, four-feet-high Indigofera acanthorrhachis, Dtr. Very curious was a Lessertia, which looked at first sight exactly like a bunch of grass leaves. On tearing it out, I found the very inconspicuous flowers and thin orbicular pods close to the crown of the very long, straight taproot, and perfectly hidden by the bunch of leaves. The sulphur-yellow Grielum sinuatum, with a fleshy, edible, taproot, thickly covers acres of sand. It has a tiny, lovely flower very similar to a Shamrock, but belongs to the Rosaceae. Among the three Heliophilas collected was one with a most graceful habit and flowers of a pretty light blue.

How these and a hundred other plants of the sandy flats manage to germinate, grow to one foot high and more, produce flowers and fruits in this apparently clean mineral sand, which affords no trace of nitrogenous matter, is most surprising. But still more puzzling is the fact that with such a trifle of rain, *i.e.*, half-an-inch during the whole year, together with the moistening of the surface of the sand by the almost daily morning dew, the plants are able to produce not at all unimportant quantities of organic matter. Although the evaporation in the Klinghardt Mountains is enormous, the quantity of dew is large enough to moisten the sand to a depth of several metres. The best proof of this fact is the occurrence of the famous, deep-rooting Acanthosicyos horrida, the Naras,* which grows here to perfection, without the slightest accumulation of ground water, only depending upon ground-moisture.

It has been stated by geologists who very reasonably distinguish between ground water and ground moisture, that below a stratum of moist sand varying in depth from between twenty to thirty feet, there is dust-dry sand down to the rock layer. The uppermost may, however, become completely dried out during the hot and stormy day-time, whilst during the early morning hours it will again be moistened from above by dew as well as by the ground moisture rising from below. From this it may be partly understood how such a profusion of plant life on the seemingly poorest sand is possible. That big shrubs and trees, as Acacia giraffae or Zizyphus mucronata, both common thirty miles further inland, cannot find their necessary minimum for existence, is not surprising; their evaporation by respiration during their fast-growing yearly period (September to November) is so large that the necessary water could not be afforded by moist sand, however excellent the other climatic conditions might be. From the scientific point of view it is a pity that, at least to my knowledge, no attempt has been made to measure the quantities of dew precipitated in such an interesting region as the Klinghardt Mountains. This cannot be computed with a common rain gauge; there must be a large catchment surface, at least one metre square, and it must be constructed of a material which radiates warmth in the same degree as the quartz sand does. The same importance would attach to the measuring of the yearly evaporation by an evaporometer.

The Succulent plants, and especially the Mesembryanthemums, which absorbed the larger part of my interest when collecting plants and observing their life within the boundaries of the Consol Diamond Mines territory, were represented in the Klinghardt Mountains in a very high degree. Out of the twenty-nine species of Mesembryanthemums I found nine new species, but I am quite sure that could I have changed camp ten times within a three months' sojourn, I should have discovered from five to ten other new species.

The most extravagant of my discoveries is M. velutinum (or, as about the time of publication Mrs. L. Bolus had published a species under that name a short time earlier, I call it now—as every species of Mesembryanthemum published under this good old generic name is exposed to danger—Astridia velutina, Dtr. nom. nov.). Although not deviating by any easily seen attribute from the general habit of Mesembryanthemum, it is, out of six hundred species, the only one hitherto known which has not smooth or tubercled seeds, but they are covered thickly with hollow hairs or tubules, which give them the appearance of little sponges. It is a fine, stately species occurring together with M. gigas, M. quartziticum and M. psammophilum in sand-filled cracks of the dark phonolite, and varies in the colour of its showy flowers from purple to white.

Other Succulent plants we found either in places of the same nature or in stranded dunes mixed with loose phonolitic rock, besides the everywhere common Aloe dichotoma there are a lot of species belonging to the Asclepiadeae, Compositae, Euphorbiaceae, Crassulaceae and Geraniaceae, such as Pelargonium mirabile, in thick, intricate cushions; the new Othonna pusilla; a very stately Senecio with terete, fleshy, subulate leaves; the new Trichocaulon Delaetianum; wonderful big cushions of the rare and ornamental Euphorbia cervicornis, and at least six Crassulas new to me.

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* A shrubby, spiny, leafless Cucurbit with excellent large, spiny, fragrant fruits, occurring near Walfishbay only above ground water. It is the best water indicator. *E.D.*

On phonolitic soil as well as upon limestone growing luxuriantly and flowering, was a Cotyledon of the size of C. orbiculata, Lin., with large flowers, and leaves like a Plum, or sometimes sausage or egg-shaped. At first sight I took it for a new species, but critical examination showed that all the six or eight forms (often three of them upon a few square yards) were simply variations of Cotyledon orbiculata, although there was not a single plant which could be regarded as a connecting link between the typical, spathulate, flat-leaved type and my findings. On account of the complete identity of the flowers of both extremes, I felt the necessity of naming the whole complex of forms C. orbiculata var. oophylla. A proof of the correctness of my view was found a year later at Warmbad, where to the west of its church we found a loose, white, quartz rock beset with a dozen plants of C. orbiculata in all forms, including the typical broad-leaved one.

A splendid sight was a long ridge of brownish quartzite, about 150 feet high, with a flowering colony of C. fascicularis, Cit. There were thousands of it on a space of a few acres, and not more than three to four feet high; the perfectly erect, very soft stems are up to twelve inches at the base thickly covered with a papery, impermeable, many-layered rind, and bear near the top a scanty, short, very thick ramification which latter was crowned by loose and ample panicles of red-and-yellow-greenish striped, large flowers on erect, coral-red flower stems. The rosettes of fleshy green leaves only appear after flowering. Without flowers the bulky, watery stems (about 92 per cent. water) look exactly like those of the three succulent species of Cissus of the Hereroland, and have, like them, the same capacity of scarcely shrinking when uprooted and exposed to the merciless, scorching sun. It laughs at such efforts! The plant knows that it can be killed only by a thunderbolt smashing it to pieces! Its roots are ridiculously feeble and short, but perfectly sufficient to make up with the help of a single rain—or with a heavy mist—its loss of weight suffered by a twelve months' fast. This is not so miraculous as it seems to be. A little piece of our Sedum acre would preserve its life under similar circumstances for an equally long period. Not in South-west Africa, of course, but in its fatherland. A specimen of Cotyledon fasciculata cultivated for some years in an English Succulent house, would, if exposed upon a hill of its natural home, die within a short time. The total sum of warmth, dry, strongly moving air and light, can never be secured in a glasshouse in a northern climate; the physiological nature of the plant has been altered and its resistance severely diminished in consequence. *Prof. K. Kinter, Bautzen.*

(*To be continued*).

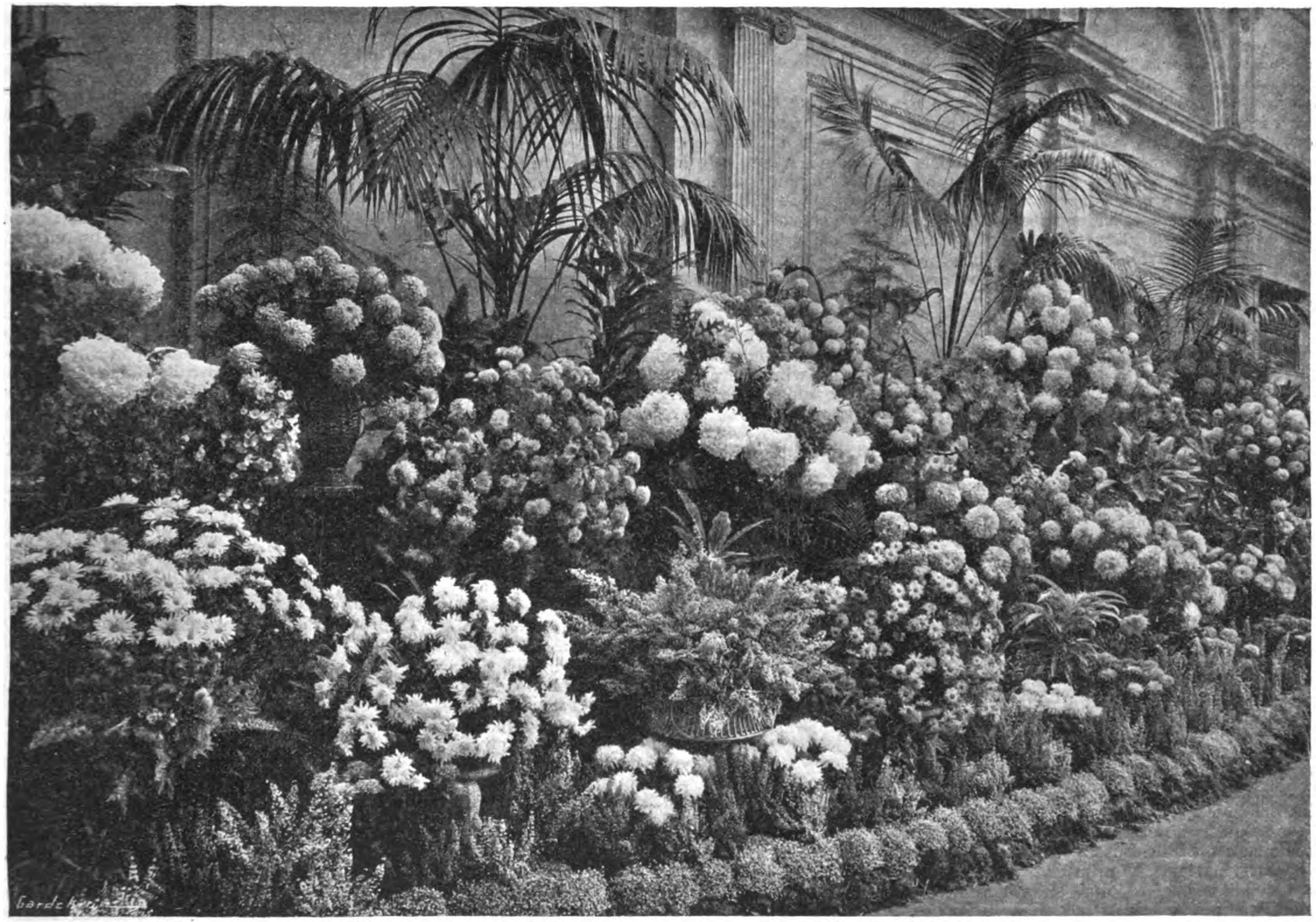

FIG. 193.—BRITISH FLORISTS' FEDERATION'S GOLD MEDAL EXHIBIT OF MARKET CHRYSANTHEMUMS AND PLANTS AT THE ROYAL HORTICULTURAL HALL, NOV. 16.

(see p. 418).

GARDEN NOTES FROM SOUTH-WEST SCOTLAND.

CONFORMITY with the priority rule affecting the scientific names of plants requires that Pampas Grass, formerly known in botany as Gynerium argenteum, must now be referred to as Cortaderia argentea; and that noble New Zealand reed, for which no English name has been coined, but of which we used to speak glibly as Arundo conspicua, must now be called Cortaderia conspicua. Both these plants are extremely ornamental; but for north-country gardens C. conspicua is far the more desirable.

Pampas Grass makes no show with us until the very end of September, and this year its plumes have been hopelessly dishevelled by the violent storms which swept over the land in October; whereas the other species, having begun its display in July, still waves its silky pennons, and these will endure to brave the winds of March. The two species are equally hardy in the climate of Britain.

In Mr. Grove's interesting note about the New Zealand Flax (p. 387), he refers to the testing of its fibre for rope-making in the Royal Dockyard at Portsmouth. I have been told that the only particular in which it was pronounced inferior to Manila Hemp (Musa textilis) was that of colour. It failed to bleach so white as Manila, and this told against its adoption for use in the King's ships and yachts; but for ordinary cord and binding twine it proved all that could be desired. Landowners, myself included, were encouraged to plant considerable areas with Phormium, which has the merit of growing vigorously in sour, wet land. Shortly before the great war, a company was in process of formation for manufacturing the fibre, and a carding or teasing machine (I do not know the correct technical term) was constructed to deal with it, which it did most effectively; but the outbreak of war put an end to the enterprise. Since the war, the highest price I have known offered for the leaves is £5 a ton, which would barely cover the cost of cutting and transport.

Frost, not only the sharpest, but the most continuous that I can remember so early in the season, ruined all autumnal blossom in the garden except the invincible Gentiana sino-ornata, which is still opening its azure trumpets in mid-November. The rose-coloured variety of Rhododendron Nobleanum (well-named venustum) opened its first bloom on October 1; but it did not proceed much further before it was overtaken by frost. Howbeit, neither cold, nor wet, nor wind has tarnished the shining purple capsules of Billardiera longiflora, strung along its branches on a south wall. This pretty climber is not often met with in private gardens, probably because, as a native of Tasmania, it cannot be reckoned hardy in all districts; but where winter is tempered by the moist breath of ocean it grows as freely as any Honeysuckle. The flowers—slender tubes of greenish yellow—are not very attractive, but the deep, bluish-purple fruits hanging on the bush till Christmas, always command admiration from visitors. *Herbert Maxwell, Monreith.*

NOTES FROM WISLEY.

At a time when flowers are scarce, bright colours are particularly acceptable. This, no doubt, accounts for the growing popularity of Nerines, a trial of which is now in progress at Wisley. Nearly forty varieties of these natives of South Africa are being grown, and in view of the fact that they were only planted last year, as small bulbs, the show of bloom produced is very creditable. Flowering this year commenced as early as the beginning of September, and it seems probable that some of the late varieties will continue in bloom until December.

At the present time His Majesty and Glory of Sarnia are very conspicuous on account of their bright, orange-scarlet blossoms, while pretty, pink varieties are to be seen in Brocade, with its markedly crisped perianth; Louvain, Dainty Maid and Claire, with Rhododendron-like blooms. The only white-flowered variety in bloom is N. flexuosa alba, the flowers of which are small.

Other South African bulbous plants in the same house are Lachenalias, which should flower in the early spring. The bulbs grown for last year's trial have been repotted and the numerous small bulbs taken off the parent plants have also been potted.

The same greenhouse includes a trial of Freesias, of which over one hundred varieties are being grown. Although the bulbs were all planted at the same time, they have shown considerable irregularity in starting. This may be due to their times of ripening-off.

The new alpine house, which is sixty feet in length, has just been completed. It is some distance up the hill from the old one, and under the new conditions the plants will have better light and air than in the original building. Already about seven hundred pots and pans of alpines have been installed, among which is a large number of types of Saxifraga Cotyledon. The offshoots have been removed from these plants, each of which is grown as a single rosette, and extremely long racemes and stems should be produced. Although few plants are yet in bloom in this house, the general effect is very pleasing, and a certain amount of colour is afforded by such plants as Galax aphylla, with it sred leaves, Sedum Stahlii, and silvery-foliaged subjects such as Cotyledon Purpusii and Alopecurus lanatus.

The heavy rains have not favoured flowers on the rock garden, but Primula Winteri in its sheltered cranny is already in bloom and will probably continue to flower throughout the winter.

Visitors to Wisley may, perhaps, wonder at the differently coloured grease bands fixed on the old Apple trees. These are part of an experiment to discover whether injurious insects, such as the Winter Moth, are attracted by any particular colour, or, in technical language, to discover the phototropic responses of insects.

A curious freak of nature which has occurred among the fruit trees is the premature flowering of some shoots of a Jargonelle Pear. The flowers—as is seldom the case at this season—are well-formed and have opened perfectly. *J. E. Grant White.*

NOTICES OF BOOKS.

Winter Blossoms.

UNDER the title of *Winter Blossoms from the Outdoor Garden,*[*] Mr. A. W. Darnell has brought together in book form and in very pleasant fashion, a complete list of those shrubs, border and alpine plants that flower out-of-doors during the dull season of the year. So far as we are aware this method of grouping has never been adopted previously, although all the information given is to be found scattered through horticultural dictionaries and encyclopaedias and the pages of horticultural journals.

The work is a handy book of reference on a peculiarly fascinating subject, for all plants that assist in the brightening of our gardens during winter are greatly prized, and deserve to be more extensively cultivated. It is well illustrated, and all the illustrations are by the author whose work, by the way, has frequently appeared in our pages. Mr. Darnell's drawings are meticulously correct, and they are well reproduced in his book, although some of the coloured plates leave something to be desired.

The arrangement of the book is alphabetical, commencing with Acacia Baileyana, which is such a pretty and graceful feature in Cornish and Devonian gardens during January, and concluding with the charming little Zephyranthes versicolor. The author gives considerable space to species of Anemone, Crocus, Galanthus, Erica, Colchicum, Hamamelis, Helleborus, Iris, Primula, Prunus, Rhododendron and Saxifraga, and in his "foreword," he gives a general account of the methods of propagating the various hardy, winter-flowering subjects he subsequently describes. We commend the book to amateurs who desire to make their gardens as attractive and interesting during winter as our climate will permit.

Cotton.

IN view of the importance of Cotton as a world crop and the leading position which the manufacture of Cotton takes amongst industrial concerns in this country, it is necessary that full information regarding the production of Cotton should be available to both producers and users of this important commodity.

In a recently issued book,[†] which Mr. W. H. Johnson has prepared, there is given, in a form in which it can be readily consulted, a very full and complete survey of the present position and prospects of Cotton production. After an introduction by Sir Wyndham Dunstan, there is a foreword by Sir William Himbury, the Managing Director of the British Cotton Growing Association, in which is given a brief account of the valuable work of the Association, over a period of nearly a quarter-of-a-century, in promoting the cultivation of Cotton in British overseas countries. Then follows a short historical sketch of the growth of the Cotton industry, and there is an interesting reminder that two hundred years ago western civilised nations were almost entirely ignorant of the existence of Cotton, whilst now there are five times more Cotton than wool used for clothing, and it is estimated that about nine-tenths of the clothing of the world's inhabitants is supplied by this material. The manufacture of Cotton in this country is the leading industry, and Cotton goods are our most valuable export; moreover, about three million people in this country depend on the Cotton industry for their livelihood. It is obvious, therefore, that adequate and cheap supplies of suitable raw material to maintain such a vital industry as this, is a matter of great importance.

All the cultivated Cotton plants are species of Gossypium, which are related to our Abutilons, Mallows and Hollyhocks. As they have been in cultivation over a long period and hybridise readily, it becomes a matter of some difficulty to refer any particular cultivated form to the species from which it was derived. In the short chapter in this work devoted to the botanical aspect of the subject, the classification adopted is that of Sir George Watt, in his great work *The Wild and Cultivated Cotton Plants of the World.*

The methods of Cotton cultivation in all countries of the world where Cotton is grown, either as an established industry or only as an experimental crop, occupies the major portion of the book. Commencing with the United States of America, which is the world's leading Cotton producer, the cultivation of Cotton in countries of major production is described in detail, the other countries in this category being India, Egypt, Brazil, China and Russia. Then follow several chapters dealing with Cotton production in countries of the British Empire, other than India, the countries mentioned including Sudan, Uganda, Tanganyika, Nyasaland, Kenya, South Africa and Rhodesia, West Africa (Nigeria, Gold Coast, Togoland, Sierra Leone and Gambia), West Indies, British Guiana, Iraq, Cyprus, Malta, Ceylon, Malaya, Fiji and Australia. Concluding this account of production, a chapter is devoted to minor Cotton-growing countries in Europe, Asia, Africa, America and Australasia. Amongst promising countries for future expansion of the Cotton industry are India and Sudan within the Empire, and Brazil and other States in South America. There is also a possibility of extending the industry in Australia, South Africa and Iraq. Clear outline maps with Cotton areas shown in green accompany the descriptive matter relating to each country, or group of countries, dealt with.

From the above enumeration of countries it will be seen that Cotton is cultivated over large areas of the world's surface, and it therefore follows that conditions under which it is grown vary considerably. In the chapter describing the cultivation of Cotton a general account of the most usual methods adopted is given, but no one measure is universally applicable and modifications have to be made to meet local conditions. In some countries machinery plays an important part, but cheap and plentiful hand labour is the chief factor. The handling and marketing of the Cotton crop, apart from its production by the grower, is in itself a great industry which calls for machinery, transport and an elaborate selling organisation, the working of all these being fully described.

Successful Cotton-growing depends on the close co-operation between grower and manufacturer to ensure that the material produced by the one may be of the right type to meet the requirements of the other. The manufacturer's point of view is, therefore, important, and the chapter devoted to this is full of interest for the grower.

Improvements in Cotton have been effected in recent years, both by selection and by breeding, and more especially by the application of Mendel's law, but as few pure types are in cultivation, more accurate knowledge as to the factors concerned in the inheritance of desirable characters is required before the Mendelian method of improvement can be utilised to the full extent. As in the case of most cultivated crops, the Cotton plant is subject to numerous diseases and pests, and is also subject to disease, brought about by unsuitable soil conditions. Each country has its special problems to solve in this connection, and a description of these and the methods of control adopted is given in special chapters on these subjects.

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[*] *Winter Blossoms from the Outdoor Garden*, by A. W. Darnell. L. Reeve and Co., Ltd., 6, Henrietta Street, W.C. 2. Price 21s. net.

[†] *Cotton and its Production*, by W. H. Johnson, with an introduction by Sir Wyndham Dunston, K.C.M.G., LL.D., F.R.S., and a foreword by Sir William Himbury. London: Macmillan and Company, Limited, pp. xxv + 536; 1926. Price 30s. net.

The concluding chapter gives a brief account of the by-products of Cotton, but no attempt is made to deal fully with this phase of the Cotton industry, the book being concerned chiefly with Cotton production. As indicating the extent of the industry connected with one only of the by-products of Cotton it may be mentioned that in the year 1924 the mills in the United States crushed 3,308,000 tons of Cotton seed and produced 130,616,000 gallons of oil and 1,508,000 tons of Cotton-seed cake. As the oil is largely used for edible purposes and the cake is employed as a cattle food or fertilizer, it will be seen that Cotton not only supplies the raw material for the manufacturer but is indirectly an important food crop.

The scope of Mr. Johnson's book will be gathered from what has been stated above, and the work, which is a careful and accurate digest of the available information relating to this important product, may be recommended to all interested in the subject. The absence of illustrations is to be regretted, as these, if carefully selected, would have been of great assistance to the non-technical reader. It is to be hoped that in future editions this omission will be remedied.

NURSERY NOTES.

MESSRS. OLIVER AND HUNTER, MONIAIVE, DUMFRIESSHIRE.

On a slope overlooking the quaint old village of Moniaive, in Dumfriesshire, there has sprung into being, during late years, a most interesting commercial collection of hardy plants. I refer to the hardy plant nursery of Messrs. Oliver and Hunter. Some of the rarest and most coveted of the Primula and Meconopsis families, to say little of the myriad of other gems, look exceedingly happy on the soil which was once the headquarters of the hillmen in the Covenanting days of persecution—a site where the little "hill people" of Farrer, Ward and others now find a congenial rendezvous. Moniaive is easily reached from Dumfries, to which it is linked by regular train and bus services.

During a visit this last summer I noted many Primulas, some of which are extensively grown in this nursery.

P. Florindae was of special interest (Fig. 190). Here it was a handsome plant and greatly superior to the form that received a First Class Certificate at Chelsea last May. It varies in growth considerably, as, out in the open, certain plants had large, flat leaves seven inches broad and eight inches long, with the margins very coarsely toothed. Others were not toothed but elongated, resembling the Sikkimensis type. The petioles of some were so much as eight-and-a-half inches long. Some plants bore one to six flower stems and were still sending up young ones from the base. The bold scapes, one-and-a-half-inch in circumference, stood two feet six inches high, and on an umbel were found over one hundred flowers. It may be noted here that Ward gives "thirty to forty flowers to an umbel." P. Florindae requires plenty of space, and a good, deep rooting-medium of turfy loam and leaf-soil. It promises to prove a hardy perennial of the first order.

P. Waltonii, has glossy, sweetly-scented, port-wine-coloured flowers, powdered so heavily that they appear a grey white inside. Beside this grew P. prionotes, maroon-coloured, and, judging from leaf and flower, a near relation to P. Waltonii.

P. microdonta alpicola, has sulphur-yellow flowers, and a very distinct form of P. microdonta carried two and sometimes three whorls of flowers. P. pudibunda appears to be closely allied to P. sikkimensis. P. No. 21,793 (Forrest) resembles P. vincaeflora, but a member of the firm is convinced that in this he has Omphalogramma viola-grandis! P. melanops, a recent introduction of the nivalis section, was noted, also P. flexilipes, a miniature P. sikkimensis, with round, serrated leaves, and one of the daintiest Primulas seen at Chelsea this year. P. aurantiaca, also shown well at Chelsea, has deep orange candelabras. P. tsarongensis is very rare, and belongs to the Muscaroid section, while P. Marven, which is also rare, is of the Auricula type.

In another part of the nursery were large quantities of Primula Pam. This is similar in habit to the well-known P .Wanda, but it is said to have much richer-coloured flowers. Mention may also be made of Primula acaulis plena, both white and sulphur varieties. Amongst Meconopsis, I noted as the best M. Baileyi, M. quintuplinervia, M. Prattii alba and M. latifolia alba.

Other hardy plants in endless variety were lined out, doubtless only for a short stay, then to be despatched to clothe the rock gardens and borders of many homes. Nor were rare plants forgotten in this department, for here was Cremanthodium nobile, a miniature Sunflower, Tunica rhodopea, a brighter pink and with flowers three times the size of T. Saxifraga; Dracocephalum bullatum, a low, spreading Dragon Head, with about twelve spikes of mauve flowers to a good plant; and Veronica cupressoides, with upright, grey-green foliage. A strain of alpine Poppies with serrated petals and pink and orange flowers is also worthy of mention. *J. E.*

PUBLIC PARKS AND GARDENS.

Norwood Grove, which was opened by the Prince of Wales to the public on the 16th inst., adds thirty-two acres to the south-easterly side of Streatham Common. One object in securing this new open space was to preserve the amenities of the Rookery, which has been described as one of the most delightful little parks in the London district. The new open space contains many fine trees, chiefly Elms, Beeches, Lime and Firs. The Croydon Corporation will be responsible for its maintenance, and for the present intends to keep it as near as possible in its present natural state.

CHRYSANTHEMUMS IN THE SOUTHEND PARKS.

Both in the Chalkwell Hall Park and the Priory Park, Southend, Chrysanthemums under glass are again open for the inspection of the public and are attracting large numbers of visitors. In the greenhouse at Chalkwell Park some 1,100 plants are finely in flower, and 700 in the Priory Park. In the former park the house admits of a large, central staging with borders on either side running the whole length of the house. The massed plants on the staging are relieved with fine specimens of Eucalyptus, Acacias and Cordylines.

All the Chrysanthemums are carrying fine blooms, and some of the Japanese sorts have flowers of exhibition size, those of the white Louisa Pockett measuring over twelve inches in diameter.

Among the numerous varieties, those outstanding are Melody, rich yellow; Mrs. Chas. Fox, golden yellow; Mrs. J. Hopkinson, pink; Dr. J. M. Inglis, amaranth; Rose Day, pink; General Allenby, yellow; Louisa Pockett, Mr. Lloyd George, crimson; Mrs. F. J. Fleming, rosy-lilac; Mrs. George Monro, junr., crimson; Mrs. J. Gibson, mauve-pink; Thomas Lunt, crimson with golden reverse; W. Turner, white; T. W. Pockett, pink; Mrs. R. C. Pulling, yellow; and Helmuth, crimson.

Similar varieties are grown at Priory Park where the plants were nearly a fortnight earlier, this park being further inland and with soil of a lighter and warmer nature; it is also possible that the treatment of the plants in the one park has been a little different from that in the other. However, the only effect has been to extend the season, and Mr. Keeling and his staff are to be congratulated on the success of their efforts.

APIARY NOTES.

So far, in these notes, I have confined myself to the art of bee-keeping. I have dealt with the things to be done at different times by those who keep bees; reference to the laws underlying such actions, if made at all, has been incidental.

It is possible to practice the art of bee-keeping without any knowledge of the science of the subject. Multitudes of bee-keepers exist who have *a priori* rules and regulations, and no more; but who, none the less, succeed, in a measure, in satisfying the pragmatic test of a honey harvest. But to those who love their bees, and even to those who wish simply to obtain the utmost they can from their bees, a certain measure of information regarding them is welcome and desirable. They would know something of the science as well as practice of bee-keeping.

Now that the quiet time has come, the hives being closed down and will not be opened again for four, or perhaps, five months, there is an opportunity to consider the bees.

I will deal first with the queen, which the Rev. Tickner Edwards described as "a living seed-barrow, pushed by the bees across the combs."

Whether she regally orders and is obeyed or not, the fact is well known that her capacity for service decides the profit or otherwise to be derived from the hive. A good queen makes a good stock—nine times out of ten. No wonder, therefore, that attempts to improve the queen are continuous. This is more difficult than in that of any other domesticated animal or insect. To control the breeding of all stock the control must be absolute, and both parents must be scientifically chosen. In raising queens, this has been regarded as impossible, in so far that mating takes place in the air, beyond the observation, to say nothing of the control, of the bee-keeper.

And impossible it was, until recent years, when a very remarkable achievement was made known. Although published immediately, nothing like the attention has been paid to the discovery that it merited, and except for a few earnest workers in America, the matter has attracted little or no practical attention.

Obviously, if by artificial means the X quantity in queen-rearing, due to the want of control over the male parent, could be eliminated, it would become possible to ensure definite progress along any lines desired. We have always been able to raise queens from any given queen, but we have not been able to mate those young descendants to any given drone. When it is realised how important the male factor is in breeding stock, this inability of controlling the mate of the queen bee is a great handicap to the queen-breeder. It is safe to state that out of the thousands of queens bought and sold to-day not one is definitely or unequivocally an advance on the stock in the apiary at the moment. It is a lottery—a huge lottery!

Again, I would remind my readers that success depends on the queen that heads their stock. A few shillings, more or less, is negligible when spent on her, and yet those few shillings may or may not mean success.

Mr. Gilbert Barratt published his achievement in detail, making it accessible to all. In a subsequent article I shall deal with it in full, and I trust that all who love their bees, and all who want to get the best out of them, will find the matter of sufficient interest to command their anticipation. Let this be said, however, in advance, that there still remains a certain factor in queen-raising; for even Mr. Barratt has not discovered how to prevent the mating of all young queens in the air, and, so long as that is inevitable, so long there must be imperfect control in breeding. But Mr. Barratt has shown us how to reduce the X quantity by fifty per cent; we could not be sure what drone would mate with the young queen, and therefore her worker-progeny was always of unknown parentage, on the male side. Yet it is now possible to determine with absolute certainty what drone shall mate with her mother, and be the male progenitor of the virgin queen herself *John Mavie.*

THE DIE-BACK DISEASE OF GOOSEBERRY.

(BOTRYTIS CINEREA, PERS.)

THE die-back disease of Gooseberries is common in occurrence, and the damage caused by it is often serious; further, it is a disease which is not well known amongst gardeners, and is in consequence often overlooked; or more frequently the damage done by the disease is attributed to other causes.

Botrytis cinerea is, as stated above, common, and occurs as a saprophyte on almost every rubbish heap in the country; it may also be found in abundance, again as a saprophyte, on dead twigs in shrubberies and hedgerows. Under certain conditions, B. cinerea occurs as a parasite on many different plants in widely-separated genera. In addition to being the cause of die-back in Gooseberries, it has been found attacking Broad Beans, Cabbage, Fig, Lettuce, Paeony, Pea, Potato, Red Currant, Sunflower and Tomato. The fungus seems to be one of the border-line fungi, *i.e.*, those which are quite happy living as saprophytes, and also equally happy as parasites. Most of the border-line fungi gain an entrance to their hosts through wounded tissue, and, in fact, start growth in the wounded tissue as saprophytes, becoming parasitic later, when the food material in the dead tissue is exhausted.

Most of the reports that I have been able to examine state that some abnormal condition has been set up in the host. Botrytis has gained an entrance and then made rapid headway. This does not always appear to be the case with regard to the Gooseberry. I have known many cases of Gooseberry die-back that could be traced to wounded tissue, but in other cases the mode of entry has not been so clear. During this summer I have found the disease on the foliage of Red Currant and on the foliage and young tips of Gooseberry. In the case of the Red Currants, the foliage was attacked all around the edges of the leaves, and the trees looked as if they had been scorched by fire. I could find no trace of the disease on the wood. The Gooseberries had their foliage attacked in the same way, but the young, growing tips showed the disease in the wood. I could find no sign of aphis attack, which might have given the disease a way of entry.

The most usual method of attack by this disease is to gain an entrance at the base of a single Gooseberry branch. Gooseberry branches are very easily damaged at the point where they join the main stem; the damage is often not sufficient to cause death, but it is enough to allow the fungus to get in, and once in, the mycelium soon makes headway, and eventually kills the branch. Usually the first sign of attack visible to the grower is the sudden wilting of the foliage when it is about half-grown; the leaves quickly shrivel and the whole branch dies very rapidly. If the branch is not removed, the fungus begins to produce spores and they are to be found low down on the dead branch, appearing as a grey mould.

Less frequently, I have noticed that bushes have been attacked at ground level; the fungus then gradually spreads up the stem and attacks the branches. Again, the first sign of attack is the sudden wilting of a branch. If this is cut out, another branch generally dies the following season, and complete death of the tree is only a matter of time.

The young wood and leaves of the Gooseberry are often attacked throughout the growing season. The disease causes the wholesale dying back of the young wood, and the leaves appear to be scorched around the edges. It has always appeared to me that B. cinerea makes most headway in this form of attack under one or more of the following conditions. (1) Following the damage caused by aphis attack, when the tips of the young growths have been badly crippled; (2) when the bushes have been overfed with manure, causing thick, sappy, young growth; and (3) in wet seasons on bushes grown under top fruit.

CONTROL MEASURES.

These are probably more easily written about than carried out. Foremost amongst the control measures must be the cutting out of diseased wood. This, to be effective, must be done before the fungus produces spores, and the most favourable time to do the work would appear to be towards the end of March. The wounds made then would heal rapidly. In the case of a branch suddenly wilting, when the leaves are half-developed, the affected plant should be thoroughly examined. If only the one branch be affected, it is often possible to save the tree by cutting out the dying portion right to its base; the wounded tissue left on the bush should be covered with white-lead paint. If the collar of the bush is affected the best plan is to grub up the plant and burn it, because the tree is only a source of danger to the rest of the bushes. The burning of dead and diseased rubbish in and around Gooseberry bushes is essential if die-back is to be kept under control.

Since writing the above, I have had a case of Black Currants under notice, var. Seabrook's Black. All the young growths in the centres of the bushes have been killed back, from one-half to their entire length. B. cinerea is certainly present on the dead wood now, but whether it was the original cause of the trouble I am not certain. I will keep the bushes under observation next season. *Somerset.*

FRUIT GARDEN.

GOOSEBERRIES AND CURRANTS.

ALTHOUGH these small fruits will grow well in any fairly free garden soil, provided the drainage is free, ground that is in good heart, such as that which has been well-tilled and manured for vegetables the previous season, is the most suitable. If the land on which Gooseberries and Currants are to be grown has not been deeply cultivated and is of a shallow, porous character, it should be trenched deeply and enriched with well-decayed manure. Mix the dung thoroughly with the soil as the work of trenching proceeds, so that after the bushes have been planted they will produce plenty of good roots and shoots that will fruit. Although fresh animal manures are not to be recommended for newly-planted trees and bushes when the soil is sweet and sufficiently rich to ensure free, healthy growth, if the soil is poor and porous, manure is essential, and should be employed, more or less, according to circumstances.

Bush Gooseberries and Red Currants may be planted in rows six feet apart, and the same distance should be allowed between each plant in the rows. The bushes should have clean stems, quite one foot from the roots to the first branches.

A few good varieties of Gooseberries are Howard's Lancer, a large, pale green variety; Whitesmith, Golden Drop, Leveller (yellow), Speedwell Red, Whinham's Industry, London (red), Langley Gage (green), Keepsake (green), and Trumpeter (yellow).

CARE OF YOUNG FRUIT TREES.

THE present is a suitable time to lift and replant young trees that have been grown and trained in the reserve garden for some particular purpose. When carrying out this work, first see that everything is prepared in readiness. The stations prepared for the reception of the roots of each tree should be well-drained and the soil of a lasting character.

Young trees that are growing too vigorously to be fruitful should also receive attention. These may be lifted entirely and replanted in the same place; if the soil is in good condition and the drainage satisfactory, but little preparation of the soil will be necessary. Open a trench commensurate with the spread of the branches and sufficiently deep to get well beneath the principal roots. Remove the soil gradually and carefully to prevent damaging the main roots. When all the roots have been severed and lifted, trim the damaged ends. See that the soil is good and the drainage efficient, adding fresh compost if necessary. Spread the roots at different angles and cover them to the depth of six inches, a little more or less according to their thickness, after which spread a mulch of strawy manure over them. Where the soil is low and wet, fruit trees should be planted several inches above the ground level, especially Peach and other fruit trees growing and trained against walls. The soil for Peach trees, Cherries and other stone fruits should be mixed with a liberal amount of old mortar and wood ash and made moderately firm. In all gardens there should be a reserve quarter devoted to the growing of young trees for training as desired to take the place of others that are past bearing or of unsuitable varieties. *H. Markham, Wrotham Park, Barnet.*

FRUIT REGISTER.

HIGHLY-COLOURED APPLES.

THE discussion in your columns concerning Ben's Red and other highly-coloured Apples, leads me to wonder whether high colour is to be desired, especially as many of the most highly-coloured varieties have little else to recommend them.

They are popular and good sellers, and for this reason will continue to be grown, but very few of them will keep for any length of time, and some, Gascoyne's Scarlet, for instance, never has, with me at any rate, produced a full crop.

Amongst the earlier sorts, Gladstone is, perhaps, the most popular, colour again being its chief merit. Irish Peach is, however, a much better variety, although it sells for a smaller price in the market. Red Astrachan, Lady Sudeley, Devonshire Quarrenden and Worcester Pearmain are all beautiful Apples, but for flavour Quarrenden is the best of the four. They have this much in common, they are regular bearers of an average crop, and much as we may enthuse over the flavour of a Cox's Orange Pippin or a Ribston Pippin, we do get crops of the other Apples, whereas in the case of the last two, three and sometimes four years elapse between crops. In this variable climate cropping qualities seem to be of most importance, and the twelve varieties mentioned below have all produced full crops in this year of scarcity, in conjunction with such well tried sorts as Bramley's Seedling, Lane's Prince Albert and Allington Pippin.

ADAMS'S PEARMAIN.—This is a perfectly-shaped conical Apple, russet spotted, flushed red on the side exposed to the sun. The fruit is of good flavour and the variety keeps in good condition until March. It makes a close-headed tree and does best as a standard.

CHRISTMAS PEARMAIN is a larger fruit than Adams's Pearmain, and of better flavour. As its name implies, it is at its best at Christmas. The tree is an upright grower and sure cropper, the fruits growing all around the branches in clusters. This variety succeeds best as a standard.

MANNINGTON'S PEARMAIN is a smaller fruit than the other Pearmains; it is of good flavour and will keep in sound condition until April. This variety does best grafted on the Paradise stock.

BLUE PEARMAIN is, perhaps, the largest of the Pearmains, and also the best flavoured. The tree bears in alternate years with me, grown as a standard, but is a regular cropper as a bush.

MALTSTER is a delicious variety and the tree never fails to crop. The habit of growth is ragged, and the fruits are produced at the ends of the branches also on long spurs of one year's growth.

BEN'S RED never fails to produce a crop. We have only one tree here in this garden, and although I have been rather severe on coloured Apples, I would plant more trees of this sort.

RED REINETTE is one of the most beautiful Apples grown. The skin is yellow, overlaid with bright red. The flavour is only second-rate and the flesh is rather hard. The tree is a first-rate cropper.

DUKE OF DEVONSHIRE is a green Apple overlaid with russet. The fruit is of a delicious flavour and the variety is in season in January and February. The tree is a robust grower on the Paradise stock, and always produces a crop.

COURT PENDU PLAT is a well-known variety useful either for dessert or culinary purposes. It is in season from November to April. This variety blooms very late in the season and as the flowers usually escape injury from frosts the tree is a consistent cropper.

KING EDWARD VII is one of the best keeping Apples. The fruit is as round as a ball and solid throughout. The tree is of upright growth, with smooth bark and clean looking generally; it always produces a crop.

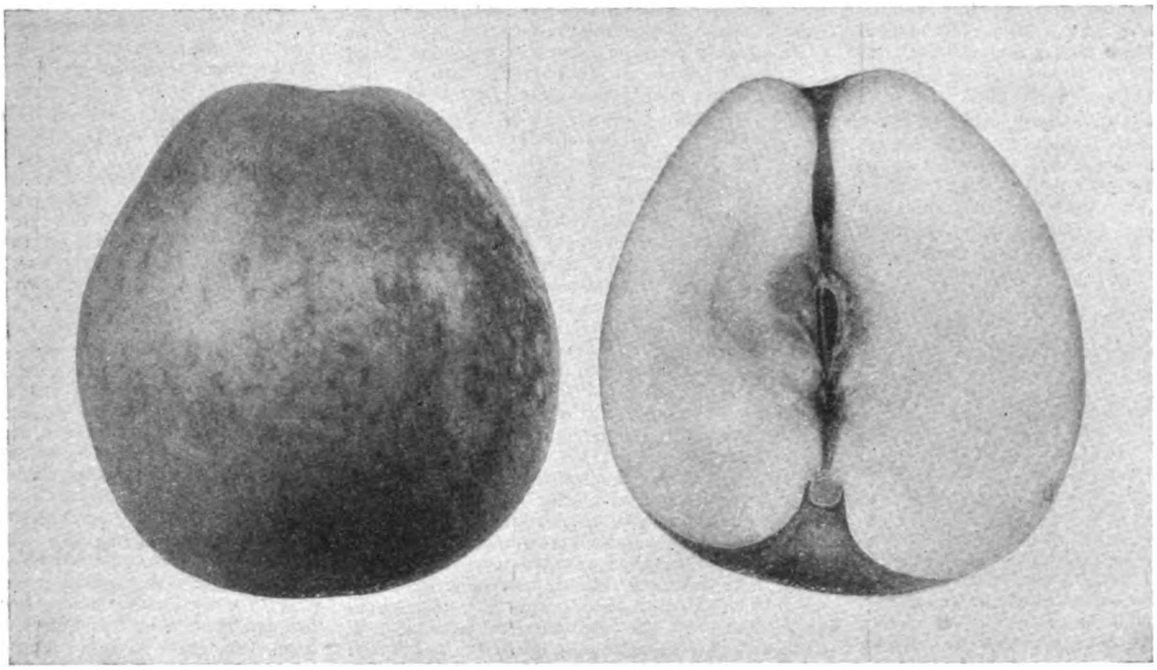

FIG. 194.—APPLE ROYAL JUBILEE.

D'ARCY SPICE.—I have to record that this is the first season in five that this tree has produced a crop. Why it should have chosen this year of all others is something to ponder over.

BEAUTY OF KENT.—Young trees of this variety have produced a full crop in these gardens this year. *H. Arnold, Bedgbury Park Gardens, Goudhurst, Kent.*

APPLE ROYAL JUBILEE.

RAISED near Hounslow, by Mr. John Graham, and introduced during the latter part of the last century by Messrs. G. Bunyard and Co., of Maidstone, this valuable, mid-season cooking Apple (Fig. 194) is well worth growing.

The tree is a good grower, is usually free from canker, and when once it has attained a fair size, is a free cropper.

It is one of the latest varieties to flower; sometimes it does not bloom until quite late in May, thereby often escaping injury by frost, also, to some extent, damage from insect pests.

Royal Jubilee carried the heaviest crop of any variety at Wisley this year, and also cropped freely during 1924, when most varieties of Apples fruited sparsely.

I believe *Market Grower* had similar experience with this variety in both these seasons. The fruit is of good appearance, being a clear yellow, occasionally with a slight rosy flush; it is of conical shape, sometimes a little ungainly in outline; cooks well, and is in season from October to December. *J. Wilson, Wisley.*

VEGETABLE GARDEN.

FORCING VEGETABLES ON HOT-BEDS.

THERE is no better method of procuring early supplies of young, tender vegetables, such as Carrots, Turnips, Beets, Asparagus and Lettuces than by means of frames placed on well-made hot-beds. So soon as the tree leaves have all fallen, they should be raked up and carted to the frame yard for the making of the hot-beds. Where it can be obtained, a plentiful supply of long stable litter should also be procured and mixed with the leaves in the proportion of two parts leaves to one of litter. Turn the leaves and dung on two occasions to mix them thoroughly, and then make the necessary beds. The hot-beds should be about two feet wider all round than the frames that are placed on them. Shake the materials and tread them firmly as the work of making the bed is proceeded with. Keep the top of the bed as level as possible so that the frames will stand firmly when placed thereon. A properly made hot-bed will retain its heat much longer than an untidy one. Allow a few days for the beds and frames to settle, and then place some rough material over the bed inside the frames, and on this put old potting soil, after it has been passed through a half-inch sieve, mixed with the same quantity of sweet loam. Fill the frames nearly to the top with the soil. When the heat of the bed is on the decline, which may be determined by using a thermometer, the frames will be ready for cropping. A reserve supply of the hot-bed material should be available for placing around the frames in very cold weather.

Asparagus is one of the easiest of vegetables to force, although the flavour of forced Asparagus is not quite so good as that from the outdoor beds. Either surplus roots may be dug up from the garden, or plants purchased for forcing. Place the plants evenly on the surface of the soil with the roots just touching each other, and then spread some fine soil over them, pressing it down gently. Moisten the bed with tepid water by means of a fine-rosed can, and admit a little air to allow superfluous moisture and heat to escape. Damp the beds over on bright days. After a few days the frames may be closed early in the afternoons. Very little other attention is needed beyond keeping the surface of the soil clean.

Small, young Carrots are much appreciated, and a quickly-maturing variety may be grown in frames over hot-beds. The soil should be made fairly firm and the seeds sown sparingly in drills made about four inches apart. Admit a little air in the mornings and close the frame early in the afternoons, after syringing the beds with tepid water. The seeds will soon germinate, and when the young plants have made a pair of rough leaves, thin them so that they just touch one another. As the plants grow they may be thinned again and the thinnings will be found large enough for use. Many varieties of Carrots, both round and half-long, are suitable for forcing.

Turnips may also be raised early in frames on hot-beds, provided suitable varieties are grown. The roots will mature quickly if the crop is treated as advised for Carrots. The plants should, however, be given a little more room to develop, and if frames can be spared, two or three successional sowings may be made, and these will provide fresh, young roots until the outdoor crop is ready. Turnips require plenty of water as the season advances, and occasional dampings overhead to keep them growing.

Beetroots of the round type are easily grown in frames, and will be very welcome when the old roots are finished. The same cultivation as advised for Turnips is suitable. So soon as the roots are large enough for use, they may be taken up and stored in sand, thus releasing the frames for other purposes.

To obtain early Lettuces, seeds should be sown in a warm greenhouse early in the New Year, and the plants pricked out into shallow boxes so soon as they are large enough to handle. They will grow quickly, and when they have made a few leaves they may be planted out in the frames at distances apart according to the variety, say, four inches for the Tom Thumb types, and six inches for the larger sorts, such as Golden Ball, or Early Paris Market. Keep the plants well supplied with water when they are growing, and close the frames early in the day. Guard against damage by slugs by dusting the soil with soot, or place a few sharp ashes around each plant. Plenty of air may be admitted to the frame when the weather is favourable; the frames should be covered with mats at night in case of frost.

Radishes mature very quickly on a hot-bed. The seeds may be sown thinly, broadcast, or in drills. Thin the seedlings sparingly and give the crop the same treatment as regards air and watering as advised for Carrots. *R. W. Thatcher, Carlton Park Gardens, Market Harborough.*

HOME CORRESPONDENCE.

[The Editors do not hold themselves responsible for the opinions expressed by correspondents.]

Salvia Pittieri.—In your issue of November 13, (p. 396), my remarks on Salvia Pittieri, called forth an editorial query, but the plant I have in mind is in no wise to be confused with S. Pitcheri (azurea grandiflora). S. Pittieri was catalogued some years ago as a rare species from Costa Rica; it is a full rich red with self-supporting stems up to two feet high, and seen in the full light of an October sun, its warm colour makes this plant one of the most conspicuous in the autumn garden. In favoured maritime localities I have seen S. Pittieri successfully wintered in the open border. *T. W. Bolas, Mount Stewart Gardens, Co. Down.*

Slugs and King Edward Potatos.—Regarding the note on page 396 of *The Gardeners' Chronicle*, November 13, I quite agree with the views expressed concerning the injury by slugs to King Edward Potatos. After growing this variety in different parts of the garden for several seasons, I reluctantly ceased growing it for that reason. Arran Chief was the next most attacked by slugs. *J. Yandell, Bridgewater.*

Apples at the Leeds Chrysanthemum Show.—Through the medium of your valuable paper, I should like to express my appreciation of the magnificent exhibit of Apples staged at the Leeds Chrysanthemum Show by the University of Leeds Department of Agriculture, and the Yorkshire Council for Agricultural Education. It clearly demonstrated that the method of culture pursued by those responsible is sound. Magnificent specimens of Allington Pippin, Cox's Orange Pippin, King of the Pippins, Newton Wonder, Bramley's Seedling and Lord Derby were staged, and it was the general opinion of competent judges that no finer fruits have been exhibited anywhere in the country this season. *J. G. Besant.*

Amaryllis Belladonna.—I read with interest the note on Amaryllis Belladonna, by *A. J. G.*, on page 396. It is rare that one sees a good display of this bulbous plant, but I well remember some years ago being employed in a south Devon garden, where a large batch was happily established at the foot of a lean-to vinery. The bulbs had not been disturbed for years, and they were so close together that they had forced themselves above the surface of the soil and so received that thorough ripening which is essential to the successful culture of all bulbs, and especially natives of the Cape. This perfect ripening was, no doubt, the secret of the gorgeous display annually, as few of the bulbs failed to flower. The vinery was situated at the top of a deep, sloping kitchen garden, facing south, and the plants were fed with liquid manure. *G. Robinson, Gannow Hill Gardens, Welsh Frankton, Near Oswestry.*

——I was very greatly interested in the illustration and notes of Amaryllis Belladonna (see pp. 346, 349). One wonders why such an easily cultivated and beautiful subject is not more widely grown. I have two beds here under the south ends of two span houses, each bed being about ten feet long by two-and-a-half feet wide, and the quantity of blooms this autumn was little short of marvellous. These plants have been established about ten years. Another large bed, planted about seven years ago, faces west. This year the plants in this bed gave a wonderful show of blooms. Between the rows in this bed, Dutch Irises have supplied a goodly quantity of blooms for the past four years. Neither the Irises nor the Amaryllis have been disturbed since planting. The only attention I give is to keep the beds clean and immediately after the Amaryllis plants have finished flowering, a mulch of rotten manure is laid on the surface, the mulch being retained until the dead foliage is cleared off, just before the flowering period. As a financial proposition, Amaryllis Belladonna does not rank very high. My average price this season would be about 1s. 9d. per dozen spikes. *W. J. Hunt, House of Charity Gardens, Knowle, Bristol.*

Fruiting of Ribes speciosum.—Your correspondent, *A. B. H.* (p. 396), does not read his *Gardeners' Chronicle* carefully or he would realise that it was because the above shrub did not fruit freely on the west coast that it was remarked on. I am delighted to learn that it fruits regularly in East Lothian, and for your readers' benefit may add that a very careful search over several large bushes this autumn resulted in a total of six small, red, hairy berries being found. This, after no pruning had been done, surely bears out my former contention that Ribes speciosum does not fruit freely with us. *A. T. Harrison.*

Wahlenbergia serpyllifolia var. major.—I was particularly interested in Mr. Ralph E. Arnold's note (p. 346) on this beautiful plant, although I am sorry I cannot endorse the need for the elaborate cultural hints he has given. The late Mr Reginald Farrer received an Award of Merit for this particular plant more than twenty years ago, and as I have grown many thousands here and elsewhere since that time, you will no doubt permit me to state the actual requirements of this lovely plant as I have experienced them. I discovered, when at Mr. Farrer's Nursery, that he lost more plants that were protected than otherwise and observed that the planted-out specimens thrived better under almost any conditions than the pot plants. I always plant them in clumps of from three to twenty-four plants, from pots, in good fibrous loam to which has been added a liberal sprinkling of sharp sand or crushed sandstone, on an elevation of the rock garden not exceeding four feet from the path level, and find that failures are exceedingly rare. I have been told that it is because our district suits them but plants which I have put out near Scarborough and Cardiff have thrived equally well under these conditions and a clump of a couple of dozen planted in the warp land of Goole without any special treatment, have thrived beyond expectations. It is generally admitted that at Ilkley we get rather more than our share of rain, and yet we grow several hundred plants each year without any kind of protection. I remember selling a plant to a gentleman who was making a rockery border just before the war started, and he planted it in quite ordinary soil. I was delighted upon my return to civil life to find the plant still growing well. The garden has had several different owners since then, one of whom planted a Berberis Darwinii within a foot of the Wahlenbergia; I had very little difficulty in persuading the Berberis to depart this life, and since then although the present owner scarcely knows it from a Cabbage, this plant produces upwards of two hundred blooms every June. If any of your readers are this way next June, I shall be glad to give them a surprise in regard to this Wahlenbergia. *P. Gardner, Craven Nurseries, Addingham, Near Ilkley.*

Autumn Colouring in 1926.—Your leading article in the issue for November 13 attributes the lateness of foliage colouring to the dry months of August and September. I think this is correct. Many trees shed their basal leaves in September owing to drought. The remainder continued almost dormant until the October rains, which stimulated the roots to activity, setting up the necessary action for colour formation at a later date than usual. This autumn has proved that to depend entirely on exotic plants for colouring effect is more or less a gamble, whilst we can depend on our own native flora with certainty. On a common in this vicinity is a group of plants as nature planted them, which for sheer beauty would tax the ingenuity of man to beat. There are three young Silver Birches in the background, with a large clump of Gorse in the foreground. Amongst the Gorse rambles the common Blackberry at will, and at the base Bracken thrusts its fronds through every opening. Against the white trunks of the Birch the foliage shows up a pure yellow, the Gorse a mass of sombre green, the Bramble foliage a rich purple-brown, whilst the Bracken makes a surround of warm brown. The whole is enhanced by rich green turf. Nor is the beauty restricted to autumn alone. In spring the delicate green of the Birch, the yellow Gorse blossom, the flowers and foliage of Bramble, and the uncurling fronds of Bracken give an equally pleasing effect. Such a combination could be well copied with advantage in many a park and wild garden. The early frost also brought flowers to a premature end. Buds of Roses and Chrysanthemums, which normally may be picked in full beauty in November, were, on October 19, transformed into bunches of brown decay. *R. Gardner.*

Two Crops of Plums.—Mr. E. H. Mason's experience in picking two crops of Plums in one season, whilst unusual, is not very uncommon. This year, some commercial plantations have yielded a second crop big enough to be picked and sent to market. It has been a season for unusual behaviour on the part of fruit trees. Some of my Apples, notably Norfolk Beauty, showed quite a lot of bloom in the early autumn; and at the normal blooming time I saw several enormous double blooms on Apples. The latter were new to me, but other growers told me that that they had seen them fairly often. *Market Grower.*

Sibthorpia europaea in Grass.—During the past summer, I had the pleasure of seeing this plant growing like a weed in the lawn at Kayhough, Kew, the residence of Miss Wright, who said it had established itself spontaneously. Being interested in British plants, she was in no way disconcerted by the presence of the Cornish Moneywort in the lawn, but was pleased with the quantity of it growing without any care or attention, though the lawn was mown regularly. The lawn is sunk, but in no respect damp, seeing that the subsoil of the whole district is sand to a considerable depth. The shade of surrounding trees, forming the boundary of the garden, was, no doubt, greatly to the advantage of the Moneywort, keeping it cool at all times. The plant must have come originally from the greenhouse, where it grows as freely, in pots, as Helxine Solierolii, its most serious rival at the present day at both ends of Britain, as a window plant. The Cornish Moneywort may also be grown as a window plant. There are two varieties, namely: S. europaea aurea and S. e. variegata, both of which were more frequently seen in the nineties of 1 st century than they are to-day. The variegated form is the most easily injured by the sun, which is liable to burn the white margin of the leaves. It keeps its colour well, however, in cool Ferneries with a moist atmosphere. *J. F.*

Fuel Shortage in Gardens.—The conditions with which gardeners are contending owing to the fuel shortage are surely enough to kill the enthusiasm of the most devoted and optimistic follower of the craft. Can any of us remember anything like the present difficulties in the glass departments? I feel impelled to submit respectfully that our *Gardeners' Chronicle* has not given the subject the publicity it deserves in regard to those unfortunates who are struggling to preserve life in their plants. Even the issue of *The Gardeners' Chronicle* of November 13 contains under the heading of "The Week's Work" the following remarks: "house in which temperature does not fall below 55° at night," "minimum temperature of 60°," "night temperature of 60° to 65°." How can these figures be maintained? May I ask those favoured writers to extend a little sympathy to those who have had to empty houses, crowd things together, and scrape enough fuel together to warm the pipes to exclude 14° of frost? No fires can be lit on non-frosty nights as the small stock of fuel must be reserved for possible future frosts, and coke remains absolutely unobtainable. The effects of the cold weather will be visible for many months to come. Thoughtful employers will make allowances, but it is to be feared many others will, when visiting their friends, naturally see the best side of things, and be inclined to make odious comparisons to the detriment of their own home garden management. *W. S. F., Yorks.*

SOCIETIES.

GUILDFORD CHRYSANTHEMUM.

THIS Society held its thirty-fourth annual show on the 3rd and 4th inst., in the County and Borough Hall, Guildford. The exhibition was opened by Alderman F. F. Smallpeice, J.P., for very many years President of the Society.

As compared with last year, there was a decrease of some fifty or sixty exhibits, due chiefly to a reduction in entries of vegetables, and more particularly of fruit. In Apples alone the contrast was remarkable. Last year Apples were in super-abundance, but on the present occasion one small table gave ample space for all that were shown. In quality, however, the specimens were good, especially one or two dishes of Newton Wonder.

The blooms of Japanese varieties of Chrysanthemums were declared by competent judges to be bigger and better than ever, and, indeed, of quite exceptional merit. For a magnificent group of about ninety Japanese blooms of splendid size, Mrs. PAYNTER (gr. Mr. H. Cook), followed up her success of last year and again won the special Certificate of the N.C.S. Among the Japanese varieties the premier bloom of the show appeared in the cut bloom class and was staged by Mr. E. S. WHEALER, of Snowdenham (gr. Mr. A. Simmonds), the honour falling to a large and beautiful bloom of Julia.

The premier incurved bloom was exhibited by the PRESIDENT (gr. Mr. W. F. Binfield), and in this case Mrs. P. Wiseman was the variety.

There was a very keen competition between Mr. WHEALER and Mr. SMALLPEICE in many classes. First and second prizes were common to both, but Mr. SMALLPEICE was successful in winning the prize for the greatest number of points in the show, and he also took two firsts for Begonias, winning respectively with Gloire de Lorraine and Turnford Hall. Moreover, Mr. SMALLPEICE, as last year, staged the only group—and that a large one—of single Chrysanthemums. The flowers were not so fully developed as in 1925, but the group made an effective display.

An exhibit of six kinds of vegetables, staged by LORD RIDDELL, of Tadworth (gr.Mr. A. Payne), was of outstanding excellence; Parsnips, Carrots and long Beet were shapely, large, and free from blemish.

At a luncheon preceding the opening ceremony, amongst the complimentary speeches was a generous tribute paid by the President to his gardener; Mr. SMALLPEICE publicly thanked Mr. Binfield for the many honours he had won for him that day and in years gone by.

The lovely groups of fruits and flowers formerly exhibited from the gardens at Tangley Park were greatly missed, a silent indication of the tremendous loss sustained by horticulture in the death of Mrs. Hamilton Fellows.

READING AND DISTRICT GARDENERS'.

OWING to the very inclement weather, the attendance at the fortnightly meeting held on the 8th inst., was not so large as usual, as many of the "country" members were absent. Mr. F. J. Green presided.

The subject for the evening's discussion was "Bog and Water Gardens," and was introduced by Mr. W. Burton, Cleeve Court Gardens, Streatley, a representative from the Pangbourne Gardeners' Association. In his opening remarks the lecturer said that bog and water gardens did not comprise one of the most popular sides of horticulture, although both were exceedingly interesting, and water added greatly to the beauty of the surroundings. Mr. Burton gave much valuable information on the formation of tanks for Lilies, ponds, marshes, bogs, paths and planting. He also gave advice as to the best varieties of flowering and foliage plants, shrubs, trees, etc., for such gardens, and the positions they should occupy in the various sections.

In a competition for six large blooms of Chrysanthemums there was only one entry, but the first prize was deservedly won by Mr. A. H. Dow, Calcot Park Gardens, with grand blooms of Louise Pockett, Mrs. J. Gibson, Thomas Lunt, Thorpe's Beauty, W. Rigby and Mrs. G. Drabble.

Mr. C. J. HOWLETT, The Mews, Earley, received an Award of Merit for twelve dishes of Pears.

ORCHID CLUB.

AT the first meeting of the Orchid Club in the session 1926-27, sympathetic reference was made to the great loss which the club had sustained by the sad and untimely death of Sir G. Holford. During the two years that he held the position of President he was a source of great strength and encouragement, as he not only appreciated and believed in the objects for which the Club was founded, but furthered their attainment by his great personality and by active participation in its proceedings.

In Mr. George F. Moore, who succeeds to the presidency, the Club is fortunate in again having an enthusiastic and successful amateur of world-wide reputation at its head.

DIPLOMA OF MERIT.

Cypripedium Swallow, Westonbirt var.—A well-balanced flower of medium size, carried on a long stem. The dorsal sepal is oval in form, well displayed, incurved in the lower part, marked by rich crimson spots on a yellow ground, with a white edge. The petals show remote evidence of C. Fairrieanum, and are yellow spotted with crimson. The elegant lip is yellow, flushed crimson.

DIPLOMA OF DISTINCTION.

Cirrhopetalum Medusiae var. alba.—A pure white variety of this well-known species. The above were shown by B. J. BECKTON, Esq.

GROUPS.

Mrs. FRED HARDY exhibited a collection of Odontoglossums and Odontiodas, including Odm. St. George, and varieties of Odontoglossum crispum; for an exceptionally fine, blotched variety of the latter a Cultural Certificate was awarded to the grower (Mr. W. GILDEN); the plant carried two enormous spikes.

Dr. CRAVEN MOORE (gr. Mr. W. Gilden), showed a group of Cypripediums, conspicuous in which was a plant of C. Fairrieanum, with six flowers, and various Fairrieanum hybrids, namely, C. Niobe, C. Thalia, C. Madame A. Février, C. Oxford, C. Chardwar, C. Germain Opoix, C. Argo-Fairrieanum and others. There were also several well-flowered plants of the clear yellow C. insigne var. Royalty (Sanderae × Kimballiana), and the front of the group was set off by many freely-flowered plants of the lovely Oncidium cheirophorum.

B. J. BECKTON, Esq. (gr. Mr. W. A. Stewart), sent a collection of choice Cypripediums, including C. Swallow, C. Ballet Girl, C. Sanacderae, Bedford's var., and the very richly-coloured C. Nubian. A fine Odontonia was shown in Papillon. The body of the group was filled with interesting species, among which were Cirrhopetalum Micholitzii, Pleione maculata, Lycaste cruenta, Beckton's var., and numerous plants of Epidendrum vitellinum.

A. T. CUSSONS, Esq. (gr. Mr. A. Daegleish), showed a small group containing Cypripedium Dreadnought, C. Priam, C. Maudiae, and the delicate mauve Pleione praecox.

ST. ALBANS GARDENERS'.

THE annual exhibition of this Society, held in the Drill Hall, St. Albans, on the 11th and 12th of November, was highly successful. Chrysanthemums of high quality were displayed in quantity, vegetables from the allotment-holders were good, and although entries in the fruit classes were not numerous, some excellent Apples and Pears were staged. The show was opened by Lt.-Col. F. E. Fremantle, M.P., and the prizes were presented by the Mayor (Sir Edgar Wigram). The Challenge Cup, presented by the Mayor of St. Albans to the exhibitor gaining the highest number of points in the show was awarded to the Misses DEBENHAM (gr. Mr. W. Porter), and the same exhibitor gained the Chrysanthemum Cup, presented by Mr. A. M. Gentle, for the most meritorious exhibit.

The St. Albans City Corporation Cup, offered for amateur and allotment gardeners competing in the vegetable section, was won by Mr. J. R. BENNETT.

The principal fruit prizes were won by T. N. G. JENNINGS, Esq. (gr. Mr. Macdonald). Good Chrysanthemums were exhibited by C. H. OSBORNE, Esq. (gr. Mr. F. Prayle), varieties such as Mrs. G. Monro, junr., Mrs. R. C. Pulling, Queen Mary, Dawn of Day and Wm. Rigby, being finely displayed.

Other successful exhibitors included Mr. R. H. WHITEHEAD and Mr. A. D. HARVEY. In the centre of the Hall was an imposing circular group of seedling, single Chrysanthemums interspersed with foliage and berried plants, Cotoneaster salicifolia being especially prominent, from the NAPSBURY MENTAL HOSPITAL (gr. Mr. W. J. Jennings). An attractive display of Cyclamens was staged by the same exhibitor. Mr. W. J. Jennings, the capable and energetic Secretary of the Society, was ably assisted by Mr. W. Collins, Parks Superintendent, St. Albans City.

BIRMINGHAM CHRYSANTHEMUM.

NOVEMBER 16, 17 AND 18.—The annual three-days show of this well-established Society, held in Bingley Hall, Birmingham, was a revelation to many of the thousands of visitors who came to see the present-day position of the Queen of Autumn Flowers. In the thirty-eight classes reserved for Chrysanthemums, all growers were catered for, and competition throughout the schedule was satisfactory. Classes were also included for miscellaneous plants, flowers, fruit and vegetables, and these, together with the great variety and high quality of the Chrysanthemums made the show one of the best and most representative seen at Birmingham for a long time. This year the Committee decided to have the decorated table classes judged by ladies, the duties being kindly undertaken by Mrs. W. A. Cadbury, an ex-Lady Mayoress of Birmingham, and Mrs. Tangye.

GROUPS.

The first class was for a group of Chrysanthemum plants on a ground space of fifteen feet by six feet. The first prize of £12 was well won by VISCOUNT COBHAM, Hagley Hall, Stourbridge (gr. Mr. J. H. Roberts), a new exhibitor, whose group included a good selection of decorative and single varieties, together with a fair number of Japanese and incurved varieties. All the flowers were beautifully clean and pleasingly arranged. The second prize also fell to a newcomer, GEORGE JACKSON, Esq., Berrow Court, Edgbaston (gr. Mr. E. A. Edney), whose rather overcrowded group was very meritorious, but the arrangement was a trifle too stiff; third, Sir GEORGE H. KENRICK, Whetstone, Edgbaston (gr. Mr. J. V. Macdonald), whose flowers were effectively arranged, but many of them were past their best.

SPECIMEN PLANTS.

Three classes were reserved for Chrysanthemum plants, viz., (*a*) six decorative Japanese varieties (singles not allowed); (*b*) six single-flowered varieties, disbudded; and (*c*) three decorative varieties, disbudding allowed. The only exhibitor in these three classes was Col. A. J. PARKES, Edgbaston (gr. Mr. L. T. Hochkins) and he was deservedly awarded first prize in each of them. His plants were large, healthy and profusely flowered, particularly Market Red, Freda Bedford, Black Hawk, Enid Elder, Florrie King, Robert Milner, Romance and H. W. Thorpe.

CUT BLOOMS.

Mr. H. WOOLMAN, of Shirley, Birmingham, again secured the first prize for a collection of Single Chrysanthemums, arranged on a table space of ten feet by five feet. He showed bold masses of beautiful flowers of Susan, Mrs. A.

Robertson, Hilda Shoebridge, Golden Seal, Crimson Dawn, Mrs. Harry Woolman, Dorothy Capp and Fantasy.

The premier class was for thirty-six Japanese blooms in not fewer than eighteen varieties, and not more than three specimens of any variety. Each bloom was shown in a separate vase on low staging, and the effect of the five twelve feet by four feet tables carrying 180 monster blooms can well be imagined. The first prize of £15 and a Silver Shield, the latter to be held for one year, was won by Col. Gretton, M.P., Melton Mowbray, whose flowers were of large size, superb quality and well set up. A few varieties of outstanding merit were Mrs. A. Brown, Majestic, Mrs. B. Carpenter, Cissie Brunton, Shirley Autocrat, Princess Mary, Mrs. George Monro, junr., Julia, Red Majestic, Dawn of Day, Queen Mary and General Petain; second, the Dowager Lady Annaly, Holdenby House, Northampton (gr. Mr. D. Cameron), who had lovely specimens of Mrs. Algernon Davis, Norman Davis, Golden Rigby (extra good), Mrs. G. Drabble, Mrs. R. C. Pulling, Dawn of Day, Mrs. George Monro, junr., and Poulton's Climax; third, the Earl of Lichfield, Stafford, who showed very fine blooms of Mrs. R. C. Pulling, Mrs. B. Carpenter and Mrs. George Monro, junr.; fourth, Sir William Bass, Bart., Burton-on-Trent.

The class for nine vases of Japanese blooms in three varieties, each bloom displayed in a separate vase, brought eight good exhibits. First, Col. Gretton, whose examples of Julia, Majestic and Mrs. J. Gibson were greatly admired; second, G. L. Waller, Esq., Tinstall Park, Bromsgrove (gr. Mr. E. Avery), who showed fine flowers of Queen Mary, Louisa Pockett and Mrs. R. C. Pulling; third, the Dowager Lady Annaly, whose flower of Majestic was particularly good.

The six exhibits in a class for twelve vases of Japanese Chrysanthemums, to contain at least nine varieties, arranged on tables six feet by three feet, were very effective. The first prize was won by G. L. Waller, Esq. (gr. Mr. E. Amery), who showed splendid flowers of Louisa Pockett, Helena Margerison, Mrs. Joyce Boolds, Thomas Lunt, Mr. T. Slack, Mrs. H. Tysol, and Queen Mary, intermingled with Ferns and Asparagus; second, The Earl of Lichfield, whose best flowers were Mrs. George Monro, junr., Mrs. G. Drabble, Madame Stuart and Princess Mary; third, Mrs. Guthrie, Northampton.

Col. Gretten excelled in the class for three vases of a pink-coloured Japanese Chrysanthemum with delightfully fresh specimens of Mrs. B. Carpenter. Messrs. A. Stokes, Coventry, and Mr. J. G. Jenkins, Berkswell, also showed blooms of the above variety, and were placed second and third respectively.

The winning exhibit of three vases of a crimson-coloured Japanese variety came from the Dowager Lady Annaly, who had big, richly-coloured examples of Mrs. George Monro, junr. Flowers of the same variety were also shown by the Earl of Lichfield and Major Harcourt Webb, Bewdley (gr. Mr. W. Gaiger), to whom the second and third prizes were awarded in the order named. The best three vases of a white Japanese variety were staged by G. L. Waller, Esq., who had exceptionally large, well-finished blooms of Louisa Pockett; second, Major Harcourt Webb, also with Louisa Pockett; third, the Dowager Lady Annaly, with Mrs. G. Drabble.

Of the ten exhibits in the class for three vases of a yellow-flowered Japanese Chrysanthemum, the Earl of Lichfield led with richly-coloured blooms of Mrs. R. C. Pulling; second, the Dowager Lady Annaly, with refined flowers of W. Rigby; third, G. L. Waller, Esq., with Mrs. R. C. Pulling.

The leading three vases in a class for any colour other than those mentioned above came from the Dowager Lady Annaly, who showed first-rate flowers of Majestic; second, the Earl of Lichfield, with Miss D. L. Athron; third, Col. Gretton, with Majestic.

The leading set of six varieties of single-flowered Chrysanthemums, six blooms in a vase, was contributed by Mrs. Guthrie, who had remarkably large flowers of Susan, Robert Collins, Reginald Godfrey, Mrs. R. Harris, Mrs. J. Palmer and Pink Beauty; second, Mr. H. Woolman, who showed exquisite flowers of Golden Seal, Mrs. Harry Woolman, Crimson Dawn and Dorothy Capp; third, Col. Gretton, who had splendid flowers of Sandown Radiance and Edith Dimond. In the class for six decorative Chrysanthemums, six blooms of each, Mr. H. Woolman beat Mr. E. J. Keeling, Small Heath, with handsome flowers of Sunburst, Harmony, Embléme Poitevine, Mrs. Roots, Liberty and H. W. Thorpe. The best vase of nine blooms of single Chrysanthemums was exhibited by Mr. E. J. Keeling; second, Mrs. Guthrie; third, the Dowager Lady Annaly.

Local Classes (Open).

In the class for a dozen Japanese Chrysanthemums, three blooms in a vase, there were five exhibits. First, Mr. G. Moorman, Bournbrook, who had large, shapely blooms of Miss D. L. Athron, Mrs. R. C. Pulling, Mrs. G. Drabble and Mrs. B. Carpenter; second, Miss Harrold, Edgbaston (gr. Mr. A. Jones), with creditable flowers of Mrs. G. Drabble, Harold Wells and Dawn of Day; third, A. W. Keep, Esq., Quinton.

In a corresponding class for twelve incurved Chrysanthemums, H. F. Keep, Esq., Edgbaston (gr. Mr. T. W. Davis), led with delightfully fresh blooms of Embléme Poitevine, Mrs. G. Denyers, G. F. Evans and Buttercup. The best two varieties of Japanese Chrysanthemums, three blooms in a vase, also came from H. F. Keep, Esq., who showed huge blooms of Mrs. Algernon Davis and Majestic; second, A. W. Keep, Esq., with grand examples of Mr. T. Slack and Julia; third, Miss Harrold. H. F. Keep, Esq., was also successful in a class for two varieties of incurved Chrysanthemums, three blooms of each. He showed refined specimens of Mrs. Judson and Embléme Poitevine; second, Miss Harrold. The last-named exhibitor excelled in a class for twelve varieties of Japanese Chrysanthemums grown within five miles of the centre of Birmingham. Miss Harrold had first-rate blooms of Mrs. B. Carpenter, Daily Mail, Dawn of Day and Mrs. R. C. Pulling; second, A. W. Keep, Esq.

The leading two vases of Japanese Chrysanthemums grown under similar conditions to those in the last-named class, came from Mr. Thomas Blower, Perry Barr, who showed superb blooms of Shirley Golden and William Turner; second, A. W. Keep, Esq.; third, H. F. Keep, Esq.

Of the four contestants in the class for three vases of single-flowered Chrysanthemums, Mr. E. J. Keeling led with uncommonly good blooms of Edith Dimond and Lady Mowbray; second, Mrs. Hugh Andrews, Winchcombe (gr. Mr. J. R. Tooley); third, Mr. J. G. Jenkins, Berkswell. Mr. Keeling was the only exhibitor of three vases of decorative Chrysanthemums, and was placed first in the next class, which was for six vases of single-flowered Chrysanthemums, disbudded to one bloom on a stem; second, Mrs. Hugh Andrews.

The most successful exhibitors in the classes reserved for amateurs who do not employ a professional gardener regularly, were Mr. E. J. Keeling, who secured four first prizes; Mr. Thomas Blower, two first prizes; Mr. R. J. Edwards and Mr. E. Ball, each of whom won one first prize.

Table Decorations.

Two classes were provided for table decorations; the Schedule required one to be decorated with Chrysanthemums only, and the other with Chrysanthemums and miscellaneous flowers. In the first class the leading position was taken by Miss D. Holder, Erdington, who relied on orange- and reddish-coloured single Chrysanthemums relieved with Fern and Asparagus; second, Studley Horticultural College, Warwickshire, who used mauve-coloured Anemone-flowered Chrysanthemums and sprays of variegated Honeysuckle; third, Sir George Kenrick, Edgbaston. The last-named exhibitor won first prize for a table decorated with Chrysanthemums and other flowers. Orchids were freely used, and the arrangement was very effective; second, Mr. E. B. Lupton, Sparkbrook; third, Mr. E. Collett, Handsworth.

Special Prizes.

Mr. H. Woolman offered prizes in the three following classes: for nine Japanese Chrysanthemums in three varieties: First, Mr. J. G. Jenkins, Berkswell, who had excellent blooms of Louisa Pockett, Queen Mary and T. W. Pockett; second, Mr. R. J. Edwards, Burcott. G. L. Waller, Esq. (gr. Mr. E. Avery), won first prize in a class for twelve Japanese Chrysanthemums. Noteworthy varieties were Dr. J. M. Inglis, Queen Mary and Louisa Pockett; second, the Dowager Lady Annaly; third, Mrs. Guthrie.

The only exhibitor in the class for six Japanese Chrysanthemums shown on boards was Mr. J. Allen, Old Hill, Staffs., whose blooms were of good size and fair quality. Mr. H. Woolman also offered a prize of one guinea to the amateur grower of the best Japanese Chrysanthemum in the show. The winning variety was Louisa Pockett, exhibited by G. L. Waller, Esq., (gr. Mr. E. Avery).

Miscellaneous Plants and Cut Flowers.

The Rt. Hon. Neville Chamberlain, M.P., Edgbaston (gr. Mr. Flatt), secured first prizes in classes for (1) twelve pots, and (2) six pots of Begonia Gloire de Lorraine, with large, pyramidal plants covered with flowers. Edward Ansell, Esq., Sutton Coldfield (gr. Mr. A. Jeffs), was second in the larger class with smaller but very well-flowered plants; and Col. A. J. Parkes, Edgbaston (gr. Mr. L. T. Hochkins), was second in the smaller class. G. L. Waller, Esq. (gr. Mr. E. Avery), won first prizes for (1) twelve Cyclamen, and (2) six Cyclamen, with sturdy plants and handsome flowers of varied colours. George Jackson, Esq. (gr. Mr. E. A. Edney) was the only exhibitor of Tree Ferns, and Mrs. Hugh Andrews had no opposition in a class for six vases of perpetual Carnations.

Fruit.

In a class for a collection of British-grown fruit arranged on separate tables, fourteen feet by four feet, there were three entrants, and the premier award went to the Studley Horticultural College, Warwickshire, whose collection included a splendid selection of varieties of large, well-coloured Apples and Pears; also Alicante and Lady Downes Grapes. Small Palms, Grevilleas and wild fruits gave added interest and variety to a very meritorious exhibit. Mrs. Hugh Andrews, Toddington Manor, Winchcombe, who was second, had a greater variety of fruits, but some were past their best and others were on the small side; third, Mrs A. Fletcher, Hartlebury Park.

The most successful exhibitor of Apples was Mr. C. W. Powell, Wareham, Hereford, who secured first prizes for single dishes, viz., Allington Pippin (large and well-coloured), Bismarck (extra good), Annie Elizabeth, Blenheim Pippin, Bramley's Seedling (heavy fruits), Cox's Orange Pippin (well-coloured), Charles Ross, Gascoigne's Scarlet (beautifully coloured), Hambling's Seedling, Lane's Prince Albert (very large), Lord Derby, Peasgood's Nonesuch (exceptionally big, richly-coloured fruits), The Queen and Warner's King. Captain H. B. Tate, Alcester, led with Cox's Pomona, and the Studley Horticultural College had the best King of the Pippins. The Forest and Orchard Nurseries, Falfield, took the lead with Newton Wonder and Mrs. Hugh Andrews was first for Rev. W. Wilks.

The first prize for three dishes of culinary Apples was won easily by Mr. C. W. Powell, whose specimens of Annie Elizabeth, Newton Wonder and Bramley's Seedling were exceptionally good; second, the Dowager Lady Annaly. Mr. Powell also staged the winning three dishes of dessert Apples, showing extraordinarily well-coloured fruits of Wealthy, Charles Ross and Allington Pippin; second, Mrs. Hugh Andrews; third, Captain H. B. Tate. Mr. S. G. Fathers, Kings Heath, was awarded first prize for two dishes of culinary Apples grown within five miles of Birmingham.

Pears were not very extensively shown.

Mrs. Andrews was placed first in the classes for Beurré Clairgeau, Durondeau and Emile d'Heyst. The Studley Horticultural College, won in classes for Beurré Diel, Doyenné du Comice and Pitmaston Duchess. The handsomest dish of Charles Ernest was staged by Major Harcourt Webb.

The winning exhibit of three bunches of Black Grapes came from the Earl of Lichfield, Stafford; Mrs. Hugh Andrews being second. The last-named exhibitor excelled with three bunches of Muscat of Alexandria Grapes; second, the Earl of Lichfield.

Vegetables.

The best collection of six varieties of Potatos was sent by Mrs. Hugh Andrews, who showed excellent tubers of Sharpe's Express, Bishop and Catriona; second, Major Harcourt Webb, with capital dishes of Abundance and Arran Comrade; third, Mr. P. Adam, Kidderminster. Major Harcourt Webb contributed the winning exhibits of (1) Onions, (2) Long Beet, (3) Celery. Mr. E. J. Keeling won first prizes for (1) three Cabbages, (2) three Pickling Cabbages, (3) six Leeks, and (4) twenty red Shallots. Mr. S. G. Fathers had the best (1) six round Beet, (2) twenty yellow Shallots, and (3) six kidney Potatos. Mrs. Hugh Andrews was the most successful exhibitor of Carrots and Parsnips, and Mr. Hedley Masters excelled with Brussels Sprouts and Cauliflowers.

There were six very good exhibits in a class for six kinds of vegetables open to allotment holders and members of allotment associations. First, Mr. W. P. Orrill, Hinckley; second, Mr. S. G. Fathers; third, Mr. E. Whitcombe.

Messrs. Sutton and Sons offered prizes for nine kinds of vegetables, and Mrs. Hugh Andrews led with splendid Celery, Onions and Carrots; second, Mr. P. Adam, Kidderminster; third, Mr. W. Perks, Lye.

Messrs. Webb and Sons' prizes were offered for six kinds of vegetables, and Mr. John Cartwright, Kidderminster, led with superb Celery, Carrots and Onions.

There were nine splendid exhibits for Messrs. Dickson and Robinson's prizes, offered for nine Premier Onions; first, Mr. E. Winchester, Rubery; second, Mrs. Hugh Andrews; third, Mrs. Wakeman, Newport, Bewdley (gr. Mr. W. Pummell).

Messrs. Clibran's prizes were offered for eight kinds of vegetables, and won by Mr. A. Fletcher, Hartlebury Park, and Mr. S. G. Fathers.

Honorary Exhibits.

Large Gold Medals were awarded to Messrs. Hewitt and Co., for hardy shrubs and floral designs; Messrs. Waterer, Sons and Crisp for hardy shrubs; Mr. H. Woolman, for Chrysanthemums; Messrs. Bakers, for hardy shrubs and garden designs; Messrs. Toogood and Son, for Chrysanthemums and vegetables: and to the King's Acre Nurseries, for Apples and Pears.

Small Gold Medals were awarded to Messrs. Gunn and Sons, for Roses; Mr. John Cock, for Potatos; Messrs. Hopwood and Sons, for Apples and Chrysanthemums; and the Forest and Orchard Co., Falfield, for fruit, fruit trees and hardy shrubs.

Silver-gilt Medals were awarded to Messrs. Kent and Brydon, for Apples and Potatos; and Messrs. Gunn and Sons for Apples, fruit trees and hardy shrubs.

Silver Medals were awarded to Col. A. J. Parkes, Edgbaston (gr. Mr. L. T. Hochkins), for specimen Chrysanthemums; Messrs. Clement Dalley and Co., for Chrysanthemums and vegetables; Mr. Hedley Masters, for Brussels Sprouts; Messrs. J. and W. E. Green, for Chrysanthemums; Messrs. J. P. Harvey and Co., for Brussels Sprouts; and Mr. F. Rich, for Primulas and Cyclamens.

Bronze Medals were awarded to Mr. Baldwin Pinney, for Violets; Messrs. Sheppards, for dwarf Conifers; Garden Supplies, Ltd., for Potatos; and Messrs. Reamsbottom and Co., for Anemones.

HITCHIN CHRYSANTHEMUM.

The Chrysanthemum show held in the Hitchin Town Hall on November 11 was one of the best of a long series of excellent exhibitions held at this Hertfordshire town. Sir Chas. Nall-Cain, Bt., is the President of the Society, and Mr. W. G. P. Clark continues to carry out the duties of Secretary with the smoothness that comes of long practice. Cut flowers, groups, fruits and vegetables were all well shown, and the capacity of the hall was again taxed to the utmost.

Cut Flowers.

In the cut flower section, Sir Chas. Nall-Cain (gr. Mr. T. Pateman), Brocket Hall, Hatfield, won the Silver Challenge Cup and first prize for six vases of Japanese Chrysanthemums, three blooms of one variety in each vase. The flowers were particularly good and represented the varieties Wm. Rigby, Julia, Louisa Pockett (one of which was the best bloom in the show), Mrs. B. Carpenter, Majestic and Mr. J. Gibson; second, the Marquis of Salisbury (gr. Mr. R. H. Hall), Hatfield House. The best four vases of three blooms each of one variety of Japanese Chrysanthemum came from Sir H. Whitehouse (gr. Mr. Carter), Stagenhoe Park, Welwyn, who showed excellent examples of Wm. Rigby, Algernon Davis, H. Wells, R. C. Pulling and T. W. Pockett; second, Mr. W. G. P. Clark; third, Col. A. D. Acland (gr. Mr. R. Habgood), Digswell House, Welwyn.

Mr. B. Francklin, Cherfield, Stevenage, showed the best six Japanese blooms, distinct, arranged in two vases, and his finest examples were of Majestic, Mrs. B. Carpenter and Julia; second, Sir Chas. Nall-Cain.

Single varieties were shown well and extensively, and the premier award for six vases, distinct, six blooms of each variety, was won by Major J. F. Harrison (gr. Mr. A. J. Hartless), with finely-developed flowers of Mona, Edith Dymond, Mrs. A. B. Hudd, Gorgeous, Juno and Mr. W. J. Godfrey; second, S. Martin Smith, Esq. (gr. Mr. G. J. Miller), Codicote Lodge, Welwyn; third, the Marquis of Salisbury. Major Harrison led for six vases of decorative Chrysanthemums with a capital display of Brilliant, Gloriosa, W. H. Thorpe, Audrey Down, etc.; second, S. Martin Smith, Esq.

For three blooms of a white Japanese variety, Sir Chas. Nall-Cain led with Louisa Pockett; second, the Marquis of Salisbury. For three blooms of a coloured variety, the prizes were awarded in the order given: to Mr. B. Francklin, for Majestic; Sir H. Whitehouse, for R. C. Pulling; and the Marquis of Salisbury, for Majestic.

For a big vase of large Japanese blooms arranged for effect, Sir Chas. Nall-Cain secured first prize with a bold arrangement of large specimens of Mrs. G. Monro and R. C. Pulling; second, the Marquis of Salisbury.

The last-named competitor showed the best dozen blooms of perpetual-flowering Carnations, while S. Martin Smith, Esq., had the best dozen Malmaison Carnations.

Mr. B. Francklin, Mr. W. G. P. Clark, Dr. Grillet and Mr. W. G. Willmott were successful prize-winners in special classes for cut Chrysanthemums.

Groups and Plants.

Three fine groups were arranged in front of the stage, and it was a pity that more space could not be allotted them. Messrs. Abbis Bros. won the first prize, Mr. Ralph Cannon, second, and P. D. Fane, Esq. (gr. Mr. A. Grillings), The Hoo, Welwyn, third.

Cyclamens were good, and the best six plants were those from Major Harrison; second, Sir H. Whitehouse; third, F. Ransom, Esq. (gr. Mr. W. Robson), Newlands. For three plants, other than Begonias, Chrysanthemums and Cyclamen, P. D. Fane, Esq., led with tall Celosias; second, Sir Chas. Nall-Cain with Clerodendron fallax. Winter-flowering Begonias were a grand feature; for three specimens of the Gloire de Lorraine section, the awards were made in favour of Sir H. Whitehouse, Major Harrison and P. D. Fane, Esq., respectively, while for three specimens of other winter-flowering sorts, Major Harrison led with very fine specimens of Emily Clibran, Optima and Exquisite; second, Sir H. Whitehouse; third, Sir Chas. Nall-Cain.

Fruits and Vegetables.

The Silver Challenge Cup and first prize offered for the best collection of fruit arranged on a space of six feet by three feet, were won by Major Harrison with a capital exhibit of Grapes, Pears and Apples; second, Mr. A. Grillings; third, Mrs. Carl Holmes (gr. Mr. A. Stagg). Sir Chas. Nall-Cain led for dessert Apples, Mr. Carter for black Grapes, and Major Harrison for white Grapes. Sir Chas. Nall Cain had the best dessert Pears.

Vegetables were as good as usual, and Major Harrison led in Messrs. Sutton's class for vegetables, and also in Messrs. J. Carter and Co.'s class.

Obituary.

Edward Atkins.—It is with regret we announce the death of Mr. Edward Atkins, at Myrtle Cottage, Cambridge Road, Stansted, Essex, on November 15. Deceased, who was sixty-eight years of age, served an apprenticeship at Caversham Park and afterwards became foreman at Babraham Hall, under Mr. Edwards, and, later, foreman under Mr. McKilrick, at New Lodge, Winkfield; subsequently he became gardener at Hargrave Park, Stansted, Essex, a post which he held for forty-two years, only retiring at the end of July last, as a result of ill-health, when Mr. A. H. Abraham took over the charge. Mr. Atkins was a life member of the Gardeners' Royal Benevolent Institution, and a frequent judge at exhibitions in East Anglia. He leaves a widow and one son, who is in Canada, to mourn his loss.

Andrew Noble.—At the opening of Ayr Chrysanthemum show last week, the chairman made reference to the death of Mr. Andrew Noble, gardener to George Hart, Esq., Coarsehill, Ayr, which occurred with tragic suddenness at Troon on the previous Saturday. In company with his gardener friends, Mr. Noble had been on a visit to Piersland Gardens, and while walking to the town he dropped dead in the street. Deceased, who had been gardener at Coarsehill for thirty-six years, had previously been employed at Ballorhangle, Bellisle, and Doonholm. He took an active interest in the work of various horticultural societies and had been a director of the Ayr Chrysanthemum Society since its inception. A skilful cultivator, he was prominent as a prize-taker, and was notably successful as a grower of Chrysanthemums. Mr. Noble is survived by a widow and grown-up family.

Jabez Webster.—We have just received news of the death of Mr. Jabez Webster, of Dundee, Illinois, U.S.A. Mr. Webster was an Englishman, born at Sutton, in the Isle of Ely, Cambridgeshire, and went to the United States in 1858; eight years later he started Webster's Nursery at Illinois. This business developed considerably, and the trees grown in his nursery now beautify the parks and roadways of Centralia and elsewhere. In 1891 Mr. Webster retired and left the management of the business to his son, Mr. Charles H. Webster.

Harry Woolman.—The tragic death of Mr. Harry Woolman, of the Sandy Hill Nurseries, Shirley, Birmingham, has come as a great shock to the horticultural world, and particularly to all who had been in any way associated with him in connection with Chrysanthemums and Dahlias. He was the eldest son of Mr. H. Woolman, and together with his brother carried on the business established by the father. Mr. Woolman had been acting as judge at the Hull Chrysanthemum Show, and also put up an exhibit there, and was returning home when he met his death in the accident to the L.M. and S. express train from York, which occurred near Rotherham. He was one of the eight victims who lost their lives in that disaster. He was not only a clever grower, but also a keen raiser of Chrysanthemums, and on the occasion of the National Chrysanthemum Society's show at Westminster on November 4, obtained four First Class Certificates for new varieties, and so late as November 15 obtained a First Class Certificate for each of the three varieties he exhibited before the N.C.S. Floral Committee. As an exhibitor of Chrysanthemums and Dahlias he occupied a very prominent position, and won great successes for his firm at the leading shows throughout the country. Mr. Woolman was a member of the Executive Committee of the National Chrysanthemum Society and also a member of the Committees of the Birmingham Chrysanthemum Society and the Birmingham Horticultural Society, and for a few years he filled the positions of hon. secretary and chairman of the National Viola Society. He leaves a widow and daughter, a brother and aged father to mourn his loss.

ANSWERS TO CORRESPONDENTS.

Bulbs for Forcing.—*J. A.* In addition to the bulbs you mention there are not many that can be forced as distinct from cool treatment; by this we assume you mean plants that may be successfully forced in high temperatures. In addition to the subjects mentioned, the Tuberose is the only one that will withstand a high temperature. On the other hand there is quite a number of bulbous plants that may be flowered before their normal season by subjecting them to slightly higher temperatures. They include such plants as Freesias, Spanish and Dutch Iris, Iris tingitana, Gladiolus of the ramosus and nanus sections. Hippeastrums, of course, may be flowered long before their normal period; Allium neapolitanum is also very useful for early work. Many other hardy bulbs may also be brought on in a greenhouse, but here the term forcing hardly applies. Among Liliums the L. longiflorum varieties are best for early forcing, followed by the varieties of Lilium speciosum; the longiflorum varieties come on the market first. If potted during October they should be flowered in about five months time, or even less, but hard forcing results in flowers of poor quality. They may be grown in a temperature of 60° to 65°, while the speciosum varieties are best grown in a lower temperature, 55° to 60° being most suitable. Weather conditions, of course, have a marked influence on the time it takes to flower Liliums, as long spells of dull weather will considerably retard the flowering period.

Names of Fruit.—*M. S.* Apple Gravenstein. *W. P. C.* 1, Beurré Rance; 2, Beurré Fouqueray. *E. H.* Brown Apple, Egremont Russet; red Apple, Rymer. *H. H.* 1, Brockworth Park; 2, decayed; 3 and 4, Doyenné du Comice; 5, Fondante d'Autumn; 6, Marie Louise d'Uccle; 7, Josephine de Malines. *F. P. B.* Pears: 1 and 3, Doyenné du Comice; 2, Pitmaston Duchesse; Apples: 1, Green Balsam; 2, Norfolk Bearer. *G. B.* 1, Winter Pearmain (syn. Duck's Bill); 2, Hanwell Souring. *T. W. H.* London Pippin (syn. Five-crowned Pippin.).

Vines Failing.—*A. S.* There does not appear to be anything seriously the matter with your Vines. The real cause of the trouble is that the roots have an unlimited run in a fairly rich border. You have restricted the growth too severely, this being followed by gross shoots which have failed to ripen; each succeeding year the trouble will increase. If you can extend the shoots of the vine to cover a larger space, the trouble will cease. If you cannot do this, root-pruning is the only safe remedy; cut out a trench twelve feet or fourteen feet from the front of the house, and leave it open, thus restricting the roots, when harder and better ripened wood will follow.

Communications Received.—W. R.—W. S. A. S.—H. E. D.—C. F. & S.—A. E. M.—Kentish Cob.—J. K.—F. W. S.—E. A. B.—E. C.—T. P.—C. O.—G. C.—F. W. G.—J. C.—T. H. E.—P.

MARKETS.

COVENT GARDEN, *Tuesday, November 23rd*, 1926.

Plants in Pots, etc.: Average Wholesale Prices.

(All 48's except where otherwise stated).

	s. d.	s. d.
Adiantum cuneatum per doz.	10 0	12 0
—elegans	12 0	15 0
Aralia Sieboldii	9 0	10 0
Araucarias, per doz.	30 0	42 0
Asparagus plumosus	12 0	18 0
—Sprengeri	12 0	18 0
Aspidistra, green	36 0	60 0
Asplenium, doz.	12 0	18 0
—32's	24 0	30 0
—nidus	12 0	15 0
Cacti, per tray —12's, 15's	5 0	7 0
Cyclamens, 48's, per doz.	18 0	21 0
Chrysanthemums, in variety, 48's, per doz.	18 0	30 0
Crotons, doz.	30 0	45 0
Cyrtomium	10 0	25 0
Erica gracilis, 48's, per doz.	24 0	36 0
—60's, per doz.	9 0	12 0
—hyemalis, 48's, per doz.	24 0	30 0
—60's, per doz.	12 0	15 0
—nivalis, 48's per doz.	24 0	36 0
—60's „	12 0	15 0
—72's „	8 0	9 0
Hydrangeas, white, 48's per doz.	24 0	30 0
Nephrolepis in variety	12 0	18 0
—32's	24 0	36 0
Palms, Kentia	30 0	48 0
—60's	15 0	18 0
Pteris, in variety	10 0	15 0
—large, 60's	5 0	6 0
—small	4 0	5 0
—72's, per tray of 15's	2 6	3 0
Solanums, 48's, per doz.	12 0	18 0
—60's, per doz.	9 0	10 0

Remarks.—Supplies have been heavy in this department. More Ericas have been on offer, including E. hyemalis in forty-eight and sixty-sized pots; Cyclamens and Solanums are much finer in quality. The latest subjects in this department are a few Azaleas in forty-eight pots, and a few Primulas in sixty-sized pots.

Cut Flowers, etc.: Average Wholesale Prices.

	s. d.	s. d.
Adiantum decorum, doz. bun.	12 0	15 0
cuneatum, per doz. bun.	8 0	10 0
Asparagus plumosus per bun., long trails, 6's	2 6	3 6
med. sprays	1 6	2 6
short	0 9	1 3
—Sprengeri, bun. long sprays	1 6	2 0
med. „	1 0	1 6
short „	0 4	1 0
Bouvardia, white per doz. bun.	12 0	15 0
Camellias, 12's, 18's per box	2 6	3 0
Carnations, per doz. blooms	3 0	4 6
Chrysanthemums, white, per doz.	2 6	5 0
—bronze „	3 0	5 0
—white, per doz. bun.	6 0	10 0
—bronze, per doz. bun.	6 0	12 0
—yellow, per doz. blooms	2 6	4 0
—yellow, per doz. bun.	9 0	12 0
—pink, per doz. blooms	3 0	6 0
—pink, per doz. bun.	9 0	12 0
—specimens, per doz. blooms	15 0	18 0
—Single Varieties—disbudded blooms, per doz.	2 6	4 0
—spray, per doz. bun.	12 0	18 0
Croton leaves, per doz.	1 9	2 6
Fern, French, per doz. bun.	10 0	12 0
French Flowers—		
—Acacia (Mimosa), per doz. bun.	12 0	15 0
—Eucalyptus, per pad	5 0	6 0
—Ruscus, green, per pad	6 0	8 0
—Myrtle, green, per doz. bun.	1 6	2 0
—Narcissus, Paper White, per doz. bun.	2 6	3 0
—Solanum berries. 300's, per pad	7 0	9 0
French Flowers—		
—Violets, Parma, per bun.	3 0	4 0
Gardenias, 12's, 18's per box	6 0	8 0
Heather, white, per doz. bun.	6 0	9 0
—pink, per doz. bun.	6 0	8 0
Honesty, per doz. bun.	15 0	18 0
Lilac, white, per doz. stems	6 0	7 0
Lilium auratum, per doz. blooms	10 0	12 0
—longiflorum long, per doz.	3 0	4 0
—speciosum rubrum, long, per doz. blooms	3 6	4 6
—short, doz. blooms	2 0	2 6
Lily-of-the-Valley, per doz. bun.	24 0	36 0
Marguerites, yellow, per doz. bun.	2 6	3 0
Orchids, per doz.		
—Cattleyas	24 0	36 0
—Cypripediums per doz. blooms	6 0	8 0
Ranunculus—		
—double scarlet	4 0	6 0
—white	4 0	4 6
—yellow	5 0	6 0
Richardias (Arums), per doz. blooms	6 0	8 0
Roses, per doz. blooms—		
—Madame Abel Chatenay	3 0	4 0
—Molly Sharman Crawford	3 0	4 6
—Richmond	3 6	5 0
—Golden Ophelia	4 0	5 0
—Sunburst	3 6	4 6
—Mrs. Aaron Ward	3 6	4 0
—Madame Butterfly	4 0	7 0
—Safrano, 24's per packet	2 3	2 6
Smilax, per doz. trails	3 0	4 0
Violets	3 0	4 0

Remarks.—The general conditions of trade have been very disappointing during the past fortnight. Supplies of practically all flowers, with the exception of Roses, have exceeded the demand. All stands are crowded with Chrysanthemums, which salesmen have found impossible to clear at any price, and the provincial requirements have been practically nil. The unfavourable weather has not favoured the trade of street vendors, even in spite of very low prices. The general conditions did not show any improvement this morning. Christmas trees and several boxes of well-berried Holly have already arrived from Cornwall. The supplies of flowers from the south of France suffered in transit owing to the mild weather. Single Violets, white Narcissus and red Ranunculus have been practically useless on arrival. Large bunches of Parma Violets have arrived in a better condition; the prices for these flowers have been easier.

GLASGOW.

Prices in the cut flower market suffered a further set back last week. Daily supplies were beyond the purchasing power of the retail traders, and salesmen experienced considerable difficulty in clearing Chrysanthemums even at the reduced values. White and Yellow Thorpe and Blanche du Poitou suffered most, being sold for as little as 3d. for 6's, but special blooms averaged 9d. Prices for Almirante, Le Pactole and Mary Richardson ranged from 6d. to 1/-; Jean Pattison, Florrie King and Cranfordia realised 8d. to 1/-; Pegram, 10d. to 1/2; while special blooms of Phyllis Cooper were worth from 1/2 to 1/6. The value of Carnations fluctuated between 3/6 and 4/- per dozen; Lilium longiflorum (Harrisii) fetched 3/6 to 5/-; Roses, 2/- to 3/-; White Roses, 2/6 to 3/-, and pink Roses, 3/6 to 4/- per dozen.

In the fruit market, American Apples were exceptionally cheap. Jonathan realised from 8/6 to 9/6 per case; extra fancy, 8/6 to 9/6; Delicious (Oregon), extra fancy, 9/6 to 11/6; British Columbia Delicious, 10/6 to 12/6; McIntosh Red, 9/- to 10/-; Canadian Greenings, No. 1, 26/- to 28/- per barrel; No. 2, 20/- to 24/-; Baldwin, No. 1 19/-; Kings, No. 1, 25/ to 28/-; No. 2, 22-; York Imperial, 15/6 to 22/-; Golden Russet, No. 1, 23/- to 25/-; No. 2, 18/- to 20/-; Starks, No. 1, 18/-, No. 2, 16/-; Canadian Cox's Orange Pippin, No. 1, 19/-, No. 2, 17/-. The prices of imported Pears were steady at former quotations, while English cooking Pears averaged 3/- per half bushel. First consignments of Blue Goose Grape Fruit realised 35/- per case, but Porto Rico brands were cheaper at 14/- to 15/-. Scotch Gros Colmar Grapes sold at 3/6 per lb., and Almeria Grapes were dearer at 38/- for best qualities. Belgian Grapes fluctuated between 1/- and 1/4 per lb. New season's Valencia Oranges, which reached the market on Friday, sold at 23/- (360), and Jamaica brands at 17/- are slightly easier. Bananas were cheap at 10/6 to 14/- for Canary, and 7/- to 8/- for Jamaica-grown bunches. The value of Tunis Dates advanced 6d. per dozen. Scotch Tomatos made 10d. per lb. for special, and 3d. to 7d. for ordinary.

A feature of the vegetable market was the sharp advance in Cucumbers to 18/- per dozen, due to scarcity. Imported Cauliflowers were worth 8/- to 10/- per crate, Lettuces 2/6 per dozen, and French Beans, 1/3 per lb.

THE WEATHER IN OOTOBER.

The month of October commenced with several unusually warm days, including a maximum of 70° on the 4th and concluded with a fortnight of exceptionally cold weather, so low a minimum as 24° (the lowest October reading since the year 1895) being registered on the 31st. On the same day the grass minimum temperature was 15°. Ground frost occurred on so many as twelve nights, the mean direction of the wind during the cold fortnight being east-north-east. Both the warm and the cold spells were calm and generally dry; but the second week of the month (which intervened between them) was a stormy and wet time, a prolonged gale occurring on the 9th. The complete month's mean temperature was two degrees below normal. Nearly 3½ inches of rain fell, or half-an-inch less than the average. A total of 106 hours of sunshine was recorded, or 10½ hours above the normal. A material fall of snow on the 24th constituted the first instance of that element visiting Southport in October for thirty years. *Joseph Baxendell, The Fernley Observatory, Southport.*

GARDENING APPOINTMENTS.

Mr. E. W. Hoyle, for the past three years gardener to B. Eric Smith, Esq., Stubbings, Maidenhead Thicket, as gardener to C. E. Eastick, Esq., Oldfield, Maidenhead, Berkshire.

Mr. A. A. Lisle, for the past two-and-a-half years gardener to H. J. Bromilow, Esq., Bitteswell Hall. Lutterworth, Leicestershire, as gardener to W. J. Beattie-Feaman, Esq., Weald Hall, Brentwood, Essex.

Mr. A. Shutler, for the past ten years gardener to R. Stafford Charles, Esq., at Broomfield, Stanmore, and Woodside House, Chenies, as gardener to W. H. Collins, Esq., Wexham Park, Slough. (Thanks for 2/6 for R.G.O.F. Box.—Eds.)

Mr. R. Noble, foreman, Beau Manor Gardens, Woodhouse, Loughborough, and previously foreman at Arden House Gardens, Dumbartonshire, as gardener to Captain K. R. G. Fenwick, Witham Hall, Bourne, Lincolnshire. (Thanks for 2/6 for R.G.O.F. Box.—Eds.)

Mr. A. A. Cavanagh, for the past year and ten months gardener to Col. C. Beddington, Villa Yolanda Gardens, Ospedaletti Legure, Italy, and previously at Kew Gardens and St. Martins, Cornwall, as manager of Liebigs Yerba Mate Plantations, Territorio de Missiones, Argentine Republic, South America. (Thanks for 3/- for R.G.O.F. Box.—Eds.)

CATALOGUES RECEIVED.

H. Hemsley, Crawley.—Fruit trees; evergreen and deciduous trees and shrubs, climbers, etc.

W. E. T. Ingwersen, Sharpthorne, E. Grinstead.—Hardy and alpine plants.

Hewitt and Co., Ltd., Solihull.—Seeds.

Little and Ballantyne, Ltd., Carlisle.—Forest trees, ornamental trees and shrubs, fruit trees, etc.

Harrison and Sons, St. James Street, Leicester.—Seeds.

THE
Gardeners' Chronicle

No. 2084.—*SATURDAY, DECEMBER* 4, 1926

CONTENTS.

Alpine garden—
  Aethionemas ... 446
  Coronilla iberica ... 446
Autumnal colour ... 450
Bog garden—
  Astilbes 446
  Calceolaria John Innes 446
  Ourisia coccinea ... 446
  Oxycoccus macrocarpus 446
Botanist's paradise, twenty days in a ... 452
Bulb garden—
  Sternbergias ... 446
Bulbs, planting ... 456
Covent Garden Market 441
Dutch emigrants for Canada 443
Entomology, the progress of economic... 453
Florists' flowers—
  Anemone-single Chrysanthemums 446
Fruit garden—
  The Apple crop in 1926 455
Fruit register—
  Select mid-season and late dessert Apples 455
"Gardeners' Chronicle" seventy-five years ago 443
Glasnevin, notes from 451
Hardy flower border—
  Plants that should not be disturbed as seedlings ... 446
Indoor plants—
  Aloe Greenii ... 447
Jacaranda mimosaefolia 456
Obituary—
  Harvey, George ... 459
  Page, F. H. 459
  Stokoe, W. R. ... 459
Orchid notes and gleanings—
  Brasso - Cattleya Mrs. J. Leemann 447
Orchids, the Westonbirt 441
Parks and gardens, public 454
Plants new or noteworthy—
  Astridia velutina ... 447
Research and the land 441
Royal visit to the Handsworth Nurseries 442
Societies—
  Barrow 456
  Croydon Chrysanthemum 456
  Guildford Gardeners' 459
  Lancaster Chrysanthemum 456
  Manchester and North of England Orchid 456
  Reading Gardeners' 458
  Royal Horticultural 457
Stock, origin of the double 442
Tradescant, John ... 442
Trees and shrubs—
  Yucca filamentosa... 452
Trees and shrubs on the Pacific coast ... 450
Trees, mortality of roadside 442
Vegetable garden—
  Kitchen garden crops in 1926 455
Vine, downy mildew of the 448
Virex glass 456
Week's work, the ... 444

ILLUSTRATIONS.

Astridia velutina 447
Calceolaria John Innes 445
Chrysanthemum Heloise... 443
Douglas Fir trees in Vancouver Island, tall 451
Downy mildew of the Vine 448–449
Tradescant, Senr., John, portrait of 442
Tree growth, stunted, on the White Horse Pass, Yukon Territory 450

SUPPLEMENT PLATE.

Yucca filamentosa at Usk Priory, Monmouth.

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last fifty years at Greenwich, 40.7.

ACTUAL TEMPERATURE—
The Gardeners' Chronicle Office, 5, Tavistock Street, Covent Garden, London, Wednesday, December 1, 10 a.m. Bar. 30.1. Temp. 43°. Weather, fine.

Research and the Land.

THE Ministry of Agriculture has done good service not only to themselves, but to the community, in issuing under the title *Research and the Land*[*] an account of "recent progress in agriculture and horticulture in the United Kingdom." It is a record of which any Ministry might be proud. Not more than a decade or two ago agricultural research in this country was limited to relatively narrow fields, and was pursued by few investigators. Now it covers all fields and is being eagerly prosecuted by a host of trained men of science. That this organised system of research, brought about in a couple of decades or so, is already bearing fruit the pages of this volume demonstrate; and as the years go on it may be relied upon to bear fruit in increasing profusion. Although the record contained in *Research and the Land*[†] must necessarily appeal primarily to those engaged in cultivation, it nevertheless contains much which all good citizens would do well to digest. For it would show them that the ardour and success with which science is being applied to agriculture and horticulture in this country are at least as great as in any other; indeed we doubt whether any other country can boast of a more extensive or better co-ordinated research organisation than that which is now in full working order in Great Britain and Northern Ireland. In England and Wales alone there are in existence some eighteen Institutes, each of which is devoted to investigating some one or other aspect of agriculture or horticulture and there are, moreover, fourteen advisory centres at each of which experts are stationed whose duty it is to enquire into local agricultural and horticultural problems, aid in their solution, and make known recent advances in scientific agriculture. Of the eighteen Institutes, Rothamsted is concerned chiefly with soil problems. Cambridge and the Welsh Plant Breeding Station, located at Aberystwyth, concentrate upon the improvement of plants by hybridisation, the former, under Prof. Sir R. H. Biffen, devoting itself—and with brilliant success—to the raising of new varieties of Cereals, the latter, under Prof. Stapledon, dealing especially with the improvement of pasture grasses. For fruit-breeding as well as general research calculated to benefit the fruit grower there are the stations at Long Ashton and East Malling. Research regarding nursery and market garden crops is conducted at the Cheshunt Research Station, plant pathology at Rothamsted and animal pathology at Cambridge and in other important Institutes. The National Institute of Agricultural Botany serves for the testing and growing on of proved new varieties and even the chicken and the rabbit enjoy the benefit of research in the Small Animal Breeding Station at Cambridge. The only important lack in this admirably organised system of research Institutes lies in the non-existence of a special station for the investigation of market garden crops; but even in this direction the plant-breeding station at Cambridge does something, engaged, as it is, in the breeding of Potatos, Peas and other farm and garden crops. Although nearly all these Institutes are of recent origin the work they have done and are doing has already had beneficial effects on British agriculture and horticulture. How great and varied are these effects may be learned from a perusal of Mr. Wilkin's clearly and simply written pages. The general reader, unaware of the economic causes which lie at the root of the present agricultural depression, may be inclined to exclaim "why is it that with all these elaborate scientific aids, British agriculture does not become prosperous." Although the comment may be uninformed it is one which compels attention. As the pages of this volume show, the Ministry has devoted great attention and large sums of money to the organisation of research in physical and biological science in relation to agriculture; but, until recently, far less of their energies have been expended on the investigation of the economics of agriculture. This is—as everyone wise after the event will admit—a misfortune. But it required a spell of adversity to show how overwhelmingly important are investigations into economics of agriculture. The omission—for which only those who are always wise and alway right will blame the Ministry—has now been made good. As readers of the last chapter will find, a wide-spread organisation, based on the Institute for Research in Agricultural Economics at Oxford, has been established and is already doing admirable work. They will find, moreover, interesting and occasionally even amusing instances of the benefits which enquiry into farm economics is apt to confer on the farmer, and they will realise that the economic side of the research activities promoted by the Ministry is destined to produce results no less important than those emanating from the research Institutes which concern themselves with biological problems. The volume is well illustrated and full of most valuable and interesting information. Everyone who lays out a half-crown on its purchase will gain by a perusal of Mr. Wilkin's account of Agricultural Research, if only by realising that this country, when it sets its mind to a task, is second to none in organising ability and capacity for research.

Covent Garden Market.—A draft of the Bill which the Beecham Estates and Pills, Ltd., intends submitting to Parliament in the ensuing session was published in the *London Gazette*, November 26. According to the terms of the Bill the proposed new market will still be called Covent Garden Market and will occupy 9·08 acres of land of the Foundling Hospital site, about two-and-a-half acres of the land known as Brunswick Square Garden, 2·18 acres of land known as Mecklenburgh Square Garden, and other land in Hunter Street, Handel Street, Brunswick Square, Mecklenburgh Square, Mecklenburgh Street, Heathcote Street, and Heathcote Mews. The Bill also applies for power to make, maintain and work railways in the metropolitan Borough of St. Pancras, as well as powers to close certain streets and roads in the vicinity of the proposed new market. It is proposed to extend to the new market all agreements and covenants in reference to Covent Garden Market and the various halls, and the discontinuation as a market of the existing Covent Garden Market. Maps, plans and sections relating to the intended railways and works, and plans of all land which may be taken compulsorily, have been deposited with the Clerk of the Peace for the Administrative County of London at the Sessions House, Newington Causeway, S.E., also with the Town Clerk of the Metropolitan Borough of St. Pancras, and the Town Clerk of the Metropolitan Borough of Holborn. We understand that the Bill will meet with strong opposition on the part of the tenants of Covent Garden Market and others whose business is directly connected with the market. Moreover, the residents near the proposed new site have banded themselves into an association for the purpose of opposing the Bill, and public meetings are being held with that end in view. It has been stated on very good authority that the present stall holders and tenants in Covent Garden will not have the opportunity of obtaining freehold rights in the proposed new market, and, further, that, given a similar amount of space, rental charges in the new site will be three times those now paid.

New Editor of "Amateur Gardening."—We learn that Mr. A. J. Macself has been appointed editor of our contemporary *Amateur Gardening* in succession to the late Mr. T. W. Sanders. Mr. Macself was formerly associated with the *Gardeners' Magazine* and *Amateur Gardening*, and in recent years has been a prolific writer of horticultural handbooks. His long experience in journalism and his wide knowledge of plants especially fit him for the position he is to occupy.

The Westonbirt Orchids.—Our readers will be glad to learn from the advertisement which appeared in our issue of November 27 that the world-renowned collection of Orchids brought together by the late Lt.-Col. Sir George Holford has been taken over by a private company under the title of H. G. Alexander, Ltd., and will continue to be under the very capable management and personal supervision of Mr. H. G. Alexander, who has had charge of the collection for the past twenty-eight years, and is well-known as a splendid cultivator and skilful raiser of Orchids.

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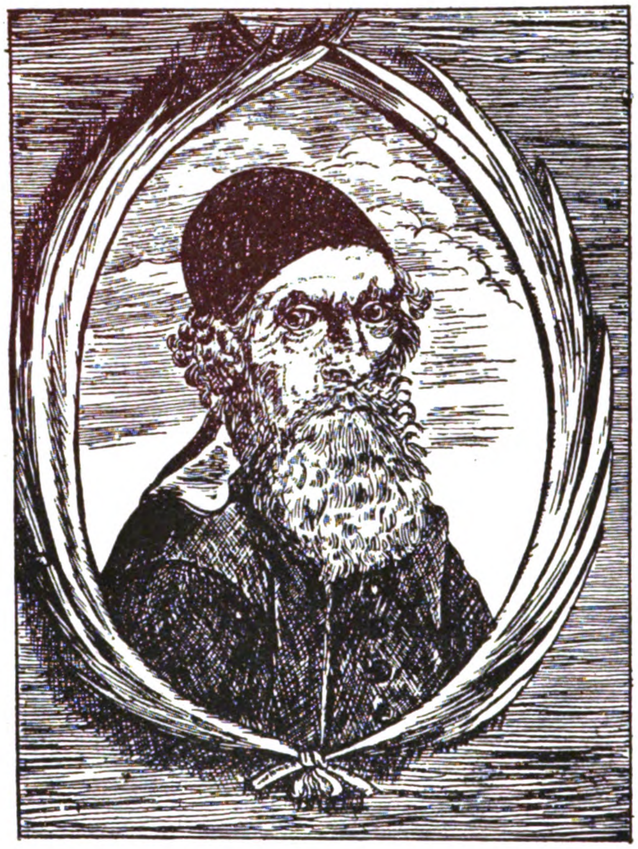
[*] *Research and The Land* by V. E. Wilkins, B.Sc., Published by H.M. Stationery Office, 1926. In paper cover. 2/6 net; in cloth, 3/6 net.

[†] See *Gard. Chron.*, Nov. 13, p. 393.

Origin of the Double Stock.—Miss E. R. Saunders gave some further information concerning the origin of the Double Stock on the occasion of the November meeting of the Linnean Society. Having stated that in the absence of any known record regarding the first appearance of the Double Stock (Matthiola incana) we have hitherto only been able to speculate as to its manner of origin, she continued: "As I have stated elsewhere (*Journ. Roy. Hort. Soc.*, Vol. XL, p. 450), it appears to have been first mentioned by Dodoens (1568), who describes it as being very rare, because it is of the larger sort which begins to flower in the early spring, and also as being found in gardens. It was first figured (so far as we know) by Lobel (1581), who represents it as similar to the Double Stock of to-day in being fully double and absolutely sterile. Further information as to its origin we have none. In these circumstances a plant which appeared in the present season in an F_2 family from the cross pure-breeding glabrous single cream ♀ × double-throwing glabrous white ♂, is of considerable interest, for the normal single and fully double condition were here exhibited in the same individual. The cross was made in 1923 and the resulting seeds sown in same autumn. The F_1 plants, which were purple and hoary (the factorial constitution of the parents being RHK and CK respectively), flowered in 1924. The seeds collected from one of these plants, which was covered, were not sown until the spring of 1926, when they yielded 179 hoary and 100 glabrous, of which 214 were single and 58 double. One of the hoary, single-flowered plants, produced six primary lateral axes in addition to the main axis. The flowers on the main axis were all typical singles, except flowers 2, 5 and 10. So also were those on the first, second, third and fifth lateral axes. The three flowers mentioned above on the main axis and those on the fourth lateral branch were of one uniform type and altogether peculiar. The calyx and corolla were normal, but the stamens were represented by petaloid structures varying in number from six to ten and showing no differentiation into filament and anther. In some, two small median swellings gave hint of the lost anther lobes, but they contained no pollen. The gynoecium differed from the ordinary siliqua in being either three- or four-valved. In many cases it became ruptured in the flowering stage, revealing within a second set of petaloid structures and a second ovary. This intermediate type of flower, which had not previously been met with in the cultures which have now been carried out for nearly thirty years, are quite distinct from the partially double flowers which are occasionally seen, and which result from more or less complete "twinning" of the flower and flower stalk (see illustration of the Hoary Stock in the first edition of *English Botany*). The sixth branch produced fully double flowers indistinguishable from those borne by the ordinary double-flowered plant, except in the case of flower 2, which must have been single, since a normal siliqua was found after the other floral members had been shed. We thus have proof that the fully double condition may arise from the normal by a single step. It is therefore possible that the mutation which is here seen in only one branch of a plant may at some time have occurred throughout a whole individual. and so have given rise at one step to the double-flowered type. Portions of the single-, intermediate-, and double-flowered regions of this exceptional plant have been preserved for cytological investigation, but this work has not yet been carried out."

John Tradescant.—Thanks to the generosity of the members of the Garden Clubs of Virginia, a simple and dignified memorial to John Tradescant was unveiled by Lord Fairfax in the Old Ashmolean Museum at Oxford during the past week. Mr. E. A. Bunyard represented the Royal Horticultural Society at the unveiling ceremony. The memorial takes the form of a window bearing the arms of Tradescant as they appear in the *Museum Tradescantium*, and the shield is appropriately surrounded by a wreath of Tradescantia virginica. The dates given—1642 and 1654—are those on which Tradescant was in Virginia to collect plants. His home was at Lambeth and he was the son of an adventurous father who visited Russia, the Netherlands and Algiers, in Elizabethan times, and was at various periods gardener to the Earl of Salisbury, Lord Wotton and the Duke of Buckingham. Both Tradescants possessed the acquisitive faculty and made collections of rarities. These collections were catalogued under the title of *Museum Tradescantium or a collection of Rarities preserved in South Lambeth, near London, by John Tradescant, London*, 1656. The collections were bequeathed to Elias Ashmole who, later, presented them to the University of Oxford on the condition that a building should be made for them. The building, designed by Sir Christopher Wren, is known as the Ashmoleum Museum, and in it the Tradescant "Museum" was housed in 1683. It is from the catalogue referred to, a copy of which is in the R.H.S. Library, at Westminster, that the portrait of John Tradescant, Senior, given on this page is reproduced.



JOHN TRADESCANT, SENIOR.

Reproduced from the portrait in Tradescant's *Museum Tradescantium*.

Survey of London's Playing Fields.—Some little time ago a letter was sent from the Minister of Health to the London County Council suggesting that, in view of the rapidity with which land in and around London is being acquired by builders, it would be advantageous to make a survey of vacant sites. The Parks Committee of the L.C.C. has now recommended that the Council's officers should make a survey of London, to discover: (1) the need of open spaces, especially of playing fields, for the use of those residing in the administrative county, and (2) what land is available in the neighbourhood of London which would be suitable for use as playing fields or open spaces. The Minister of Health intends to hold a conference of the Greater London authorities at an early date to confer on town planning.

Mortality of Road Side Trees.—In his report on the tree-planting operations on the Great West Road and other great roads in the county of Middlesex, Mr. H. Dryland, the County Surveyor, states that trees were planted on the Great Cambridge Road, North Circular Road, Great West Road and Great West Road Extension, the total length planted being about nineteen miles, and the number of trees, 2,984. The particular kinds planted were Lime, Norway Maple, copper and common Beeches, red and white Chestnuts, Cornish Elm, scarlet and Turkey Oaks, Ash and Planes. Mr. H. Dryland states that although great care was taken in planting the trees no fewer than 615, or practically twenty per cent., have died, or have been broken, the greatest proportion of casualties being among Oaks planted on the Great Cambridge Road. Mr. Dryland is careful to point out that the trees would have stood a better chance had they been planted in autumn instead of spring, and we would observe that considering the late date of the planting we are surprised the casualties were so few.

Scarcity of Sulphate of Ammonia.—Owing to the continuation of the coal strike, sulphate of ammonia has become much scarcer, and the British Sulphate and Ammonia Federation has increased the price by 5/- per ton. The present price is £11 16s. 0d. per ton, but forward buying is at a higher rate, and has been fixed for January, 1927, £12 per ton; February, 1927, £12 3s. 0d. per ton; and March-May 1927, £12 per ton.

Royal Visit to the Handsworth Nurseries.—On Saturday, November 27, Her Royal Highness Princess Mary Viscountess Lascelles and Lord Lascelles paid a visit to Messrs. Fisher, Son and Sibray's nurseries at Handsworth, Sheffield, where they showed a great interest in the fine collection of trees and shrubs grown by this firm. Her Royal Highness and Lord Lascelles lunched with Mr. W. Atkinson, the managing Director, and Mrs. Atkinson, and were subsequently conducted round the nurseries by Mr. Atkinson.

Linnean Society's Library.—We learn that from Wednesday, December 1, 1926, the Library of the Linnean Society of London will be open from 10 a.m. to 5 p.m. every day throughout the year, except on Sundays, Good Friday and the following Saturday, Christmas Day and Bank Holidays.

Honour for Mr. Charles Mason, J.P.—We learn with great pleasure that Mr. Charles Mason, of Messrs. Foster and Pearson, Beeston, Notts., has been chosen for elevation to the Aldermanic Bench of the Nottinghamshire County Council, to fill the vacancy caused by the death of Earl Manvers. Mr. Mason was deputy engineer for Nottingham before coming to London to take up the position of Surveyor and engineer at St. Martin-in-the-Fields. In 1900 he was chosen as President of the Society of Engineers. He was also examiner for the Royal Sanitary Institute for several years.

Twenty-eight years ago he went to Beeston and commenced his active interest in the firm of Messrs. Foster and Pearson, horticultural engineers. Since 1910, Mr. Mason has been a member of the Nottingham County Council, and has taken a keen interest in the work which membership entails, serving on no fewer than eleven committees.

Dutch Emigrants for Canada.—The Dutch Government has made arrangements for the emigration to Canada, during the spring of 1927, of land workers who are found suitable for colonial settlement. The cost of the emigration will be subsidised in the case of workers not having sufficient money to pay their own expenses, the minimum to be found by the emigrant himself having been fixed at f.100 or in very exceptional cases, f.50. It is calculated that the total expense for each emigrant, including "landing money," $25, will amount to f.450, or f.475. The arrangements will be made partly by the unemployment authorities and partly by the Central Holland Emigration Office.

Common Names for Plants.—Of late, the lay press has tilted fairly often against the botanical names of plants which they profess to find not only meaningless, but barbarous, horrible and, at times, unpronounceable. No doubt in an endeavour to show botanists and horticulturists how much better common names would be and, *inter alia*, how easily they could be coined, *The Observer* recently instituted a competition amongst its readers, offering a money prize for "a popular name for the Fuchsia." Many hundreds of names were sent in, and the prize was awarded for the suggestion of "Gay Ladies." Over thirty other names were quoted, and we conclude that these were considered to be the most appropriate substitutes for a plant-name which we should have considered almost to be a "household word." The printed list included: Poor Man's Orchid, Red Riding Hood, Hop-o-my-skirt, Silken Tassels, Jazz Belle, Brollie, Soldiers' Sweethearts, Pixie Lamps and Solomon's Nightcap. We imagine that most of our readers will continue to use "Fuchsia."

A New Branch of the National Playing Fields Association.—On Tuesday a representative meeting of prominent people at Aylesbury formed a Buckinghamshire Branch of the National Playing Fields Association. Lord Cottesloe, the Lord Lieutenant of the county, presided, and was supported by Lord Burnham, Sir Arthur Crosfield and the Rev. J. F. Roxburgh, the head-master of Stowe School. The movement has the active support of many of the more important landowners, farmers and local authorities, and the Duke of York sent a telegram expressing his wishes for its success in the county.

A New China Aster.—Information has reached us from the United States to the effect that a new China Aster of great beauty and usefulness has been raised by Mr. J. S. Weaver, of Pennsylvania. It appears that the newcomer, named Lady Coolidge, has been bred from the variety Roosevelt, which has been a popular American sort for a score of years. Lady Coolidge is of stronger growth than Roosevelt and produces its elegant, Chrysanthemum-like blooms on long stalks. The colour is, in effect, cerise, due to the deep pink pigment on the backs of the florets, but the satiny sheen on the upper part of each floret enhances the effect and under changing light gives a "shot" appearance. This new Aster is said to be ten days earlier than Roosevelt when grown under similar conditions; the blooms are very double, the eye showing only when they are passing out of their best condition. For cut flowers, for market, or home use, Lady Coolidge appears to be a very promising variety and worthy of trial.

English Motor Lawn Mowers in Vienna.—The Public Parks Department of Vienna held a trial on October 23 of the Atco motor-mower, made at Whitworth Works, Birmingham, with the idea of introducing this system of labour-saving into the Vienna parks. The result seemed to show that the machine worked excellently on fairly flat ground, but gave the best service when the grass was not very long.

Appointments for the Ensuing Week.—SUNDAY, DECEMBER 5: Wakefield and North of England Tulip Society's meeting. MONDAY, DECEMBER 6: Romsey and District Gardeners' Association's meeting; Harrogate and District Horticultural Association's meeting; Birmingham and Midland Counties Gardeners' Mutual Improvement Association's lecture. TUESDAY, DECEMBER 7: Royal Caledonian Horticultural Society's meeting. FRIDAY, DECEMBER 10: Royal Horticultural Society of Ireland meeting; Association of Economic Biologists meet; Orchid Club meeting.

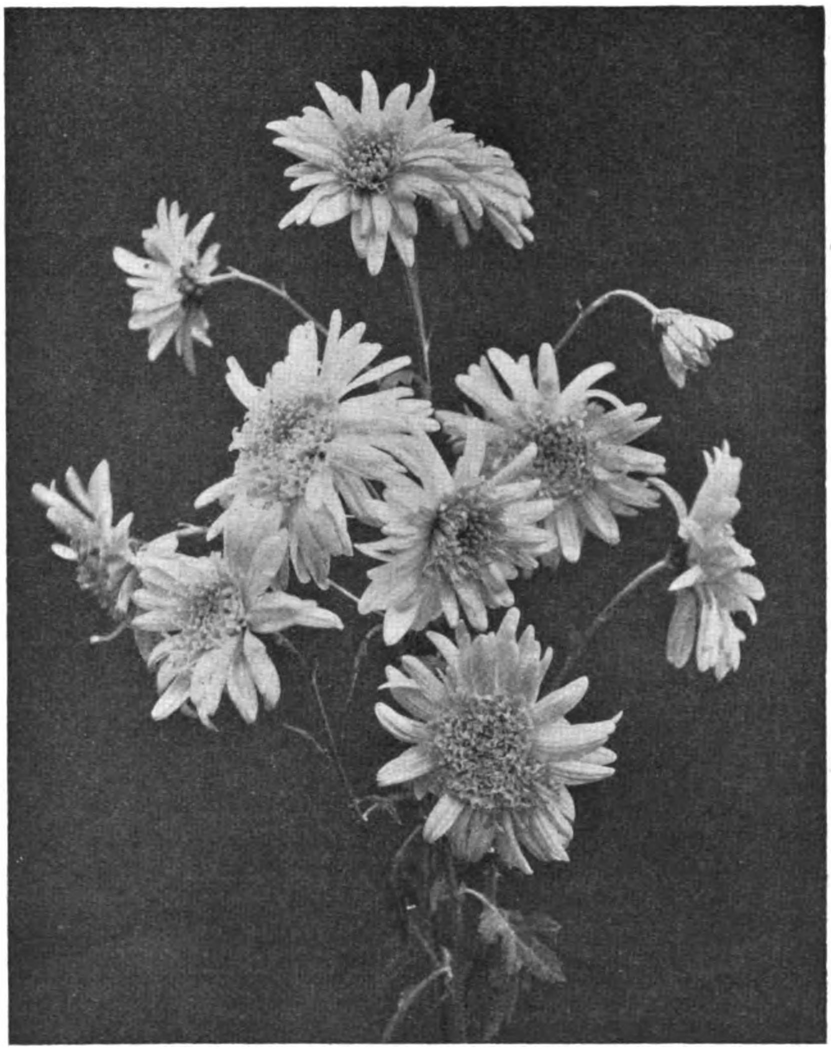


FIG. 195.—ANEMONE-SINGLE CHRYSANTHEMUM HELOISE.

(see p. 446)

"Gardeners' Chronicle" Seventy-five Years Ago.—*Hints to Persons Making a Garden.*—Rock, wood, and water being the principal constituents of natural scenery; sand, clay, and lime the most obvious characteristics of natural soils, it becomes an object with the gardener to adapt—not his soil to his plants, as is the common but mistaken practice—but rather his plants to his soil, at the same time that he makes the most of his situation for picturesque beauty and horticultural enjoyment. An erroneous idea prevails, that it is necessary to have a very good, that is, a very rich soil, natural or artificial, for a flower garden; a notion to which the requirements of the kitchen and fruit garden have, in all probability, contributed. But most persons who have travelled with botanical pursuits in temperate climates (for with tropical botany our outdoor gardening has nothing to do), must have observed that the districts most productive of variety are those of a wild and sterile character; and that while in regard to luxuriance and vigour in the development of individual species, fertile plains and rich alluvial valleys are pre-eminent, they are accompanied by great monotony in the prevailing features of their vegetation. The modern taste in gardening in England is gradually leading to a something of higher aim and wider scope than the mere landscape of pleasure-ground of the last century, or the more formal floriculture which preceded it; neither will be abandoned, because each has its merits, but they will, it may be foreseen, be united with views of a more scientific character. Geography and physiology may each contribute to give interest to collections in which mere horticulture plays but a subordinate part, though capable of combining and illustrating these two branches of science in a very high degree. The introduction of new plants, and the trial by experiment how far certain species, genera, or families—or the plants in general of certain regions, can be adopted to one climate without care, or cultivated to any useful purpose with care, form also legitimate objects of an enlightened system of horticulture. *S., Gard, Chron., December* 6, 1851.

Publications Received.—*The New Book of Trees.* by Marcus Woodward. A. M. Philpot, Ltd., 69, Great Russell Street, W.C.1. Price, 12s. 6d. net.

The Week's Work.

THE ORCHID HOUSES.

By J. Collier, Gardener to Sir Jeremiah Colman, Bart.
Gatton Park, Reigate, Surrey.

The Cool House.—Mild weather has prevailed up to the time of writing these notes, and so long as it continues plenty of fresh air should be afforded the occupants of the cool house. Odontoglossums are in various stages of growth; many are sending up their flower spikes. The plants should be exposed to all the light available, for neglect in this respect may cause the young shoots to grow weakly and the leaves to become thin and unduly lengthened. The glass should be washed both inside and out whenever it becomes dirty. Water should be applied to the roots with great care; the compost should be allowed to become moderately dry before moisture is applied, for if it is kept constantly saturated it will cause the roots to rot and the young leaves to decay at the tips. Very little fire heat will be needed when the weather is mild, and the soil will, as a consequence, remain moist for a much longer period than would be the case if more warmth was employed. When damping is necessary it should be done when the temperature begins to rise.

Mildew and Insect Pests.—At this season of the year, when the external air is mild and damp, mildew sometimes makes its appearance on the undersides of the leaves. This fungus should be eradicated as quickly as possible for it spreads very rapidly. Frequent examinations should be made for its presence, and immediately it is detected the amount of fire-heat should be slightly increased, more air admitted, and for a few days the atmosphere of the house should be kept dry. These precautions will check the spread of the mildew. The foliage should be sponged frequently with a mild fungicide added to the water. Small snails and slugs are often very troublesome at this season in the cool house. They should be very diligently sought for and destroyed, or they may injure many of the young flower spikes. These pests may be trapped by placing Lettuce leaves or small saucers of damp bran among the plants. Any special Orchids that are showing flower spikes may be made safe by placing the plants on raised stands stood over saucers of water. A brown outer sheath sometimes forms at the base of the young growths which prevents the new roots from entering into the compost; this should be removed by slitting it in several places, when it may be pulled off in small pieces.

THE KITCHEN GARDEN.

By F. Streeter, Gardener to Lord Leconfield, Petworth
Park, Petworth, Sussex.

Broad Beans.—The first sowing of an early variety of Broad Bean should be made now in boxes and the seedlings raised in a cold frame ready for planting out in the spring when the weather is favourable. For soil, use a mixture of three parts good fibrous loam, one part old Mushroom-bed manure and one part sand, with a dash of soot. See that the soil in the boxes is not allowed to become excessively wet and admit air on all possible occasions. Keep a sharp watch for rats and mice.

Earliest Peas.—Peas constitute a highly esteemed vegetable and cannot be had too early, therefore anything that can be done to promote an early supply is to be recommended. Fill a sufficient number of boxes with a similar compost to that recommended for Broad Beans, and place the seeds about two inches apart each way, covering them with fine soil about the depth of the seeds, otherwise they will be liable to swell and rise out of the soil before rooting. Admit as much air as possible to the frames at all times when the outside temperature is above 35°. We grow the following varieties for this purpose: Petit Pois, Early Giant, Edwin Beckett and Little Marvel. Keep the young plants in an upright position at all times.

Early Potatos.—The earliest sprouted sets for providing first supplies should be ready for placing either in eight-inch or nine-inch pots, or, preferably, old herring boxes. In the case of pots, cover the drainage hole with one piece of crock and cover the bottoms of the boxes with old Mushroom-bed manure from which the fine portions have been sifted. Use the following compost: three parts leaf-mould, one part fine loam and a dash of soot. Only half-fill whatever receptacle is used, and place two tubers in each pot or box. Stand the box or pot on a mild hot-bed of leaves in heated pits, or in a warm house in which a minimum temperature of 50° is maintained at night. Always warm the soil used for top-dressing, and use tepid water for watering; very little moisture will be required for some time after planting the tubers, but spray the surface during the mornings of bright days. Rats are apt to prove very troublesome and must be destroyed. Should these rodents get into the pipe chambers, I strongly advise giving them a dose of cyanogas, the fumes of which are very effective in killing them.

HARDY FRUIT GARDEN.

By W. Auton, Gardener to Viscount Elveden, Pyrford
Court, Woking, Surrey.

Figs.—Although it is not generally necessary to protect Figs in favoured gardens in the southern counties, it may be advisable to do so in cold districts during severe spells of frost. The binding of the trees with heavy material, however, to the total exclusion of light and air is not to be recommended; much greater protection is afforded by covering the branches with light canvas or mats, and there is much less liability of injuring the embryo fruits. It is sometimes advocated that the small fruits formed late in the year should be removed so soon as the trees are at rest, because they may prove a drain on the resources of the tree and generally fall after the winter. It is admitted that such fruits are sometimes cast off by the tree when new growth commences in the spring, but many of them survive and ripen after a favourable winter, hence it would appear more advantageous to allow them to remain. It seems improbable that they would prove a drain on the tree in the winter, and as the Fig in this country is more liable to suffer from super-growth than over fertility, allowing them to remain might be conducive to fruitfulness.

Cordon Trees.—If the weight of crop from cordon-trained trees is comparatively light, the quality of the fruit is of the highest, and where space is limited and a considerable number of varieties have to be grown, the system of training has much to recommend it; moreover, the total weight of fruit from a given area compares favourably with that from other methods of training. Apples, and more particularly Pears, are often trained as cordons on walls, and in the colder districts this style of training enables the grower to produce fruits of excellent quality. Such trees may also be planted in the spaces between trees which are destined to cover a considerable area, where they yield remunerative crops while the larger trees are furnishing their allotted space; when the permanent trees need more room, the cordons may be removed. Cordon trees on suitable stocks usually make a mass of fibrous roots, which enables transplanting to be done with very little check to them. There are several methods of cordon training, each of which serves its particular purpose. They may be grown with single, double, or even more stems, which may be trained obliquely on walls, or in an upright manner to cover arches. They may also be trained horizontally in single or double stems close to the edge of a path, as a finish to a plantation of fruit trees. No other type of tree is so completely under the control of the grower, and the routine work of feeding, pruning and spraying may be carried out with the minimum of labour, and while the restrictions in growth entailed probably shortens the useful life of the tree replacements present no great difficulties.

THE FLOWER GARDEN.

By F. C. Puddle, Gardener to Lord Aberconway,
Bodnant, Taly-Cafn, North Wales.

Alliums.—The genus Allium contains many interesting species which are very decorative and worthy of more extended cultivation. Some of the species, however, have rather scanty foliage, which is singularly ineffective as a foil to the flowers, but when associated with other plants, and particularly those having grey foliage, the coloured species of Allium are very handsome. A very effective bed may be made by planting a combination of Artemisia armeniaca, Senecio compactus or S. Greyii, Eryngium alpinum and Thalictrum dipterocarpum, interplanting the whole with Allium descendens, and edging the bed with Veronica incana. Other Alliums may be included, but most of the species are past their best before the Eryngiums and Thalictrums flower; they will, however, add interest to the bed during May and June. Alliums are of easy culture. A fairly rich but well-drained bed in a sunny position will suit the majority of the best species, which include Allium azureum, A. pulchellum, A. Rosenbachianum, A. Ostrowskianum, A. narcissiflorum (syn. pedemontanum), A. giganteum, A. descendens (syn. sphaerocephalum), A. karataviense, A. albopilosum, and A. Schubertii.

Tulbaghia violacea.—This South African plant is hardier than is generally imagined, and is well worthy of inclusion, if the bed is in a fairly sheltered spot. Its flowers are mauve rather than violet; they are produced from spring to late autumn, and the only objection to the plant is its strong garlic smell. Our plants are still developing a few flowers, although they have been subjected to 9° of frost on three occasions recently. Allium bulbs may be planted at any time before March.

Lily-of-the-Valley.—Beds of Lily-of-the-Valley should not be allowed to become overcrowded, or flowering will be unsatisfactory. The plants should be lifted and divided every three or four years, and the present is a suitable time to carry out the work. It is a good practice to transfer the plants to entirely fresh ground, but if this cannot be done, they should be lifted and the bed trenched and manured before replanting. The best crowns should be selected for the new beds, and they should be planted about four inches apart in the rows, making the rows six inches asunder. The flowering season may be lengthened by planting several beds each with a different aspect. A half-shaded position suits them best; the Lily-of-the-Valley will succeed on a north border, even in the colder parts of the country.

FRUITS UNDER GLASS.

By T. Pateman, Gardener to Sir Charles Nall-Cain,
Brocket Hall, Hertfordshire.

Pot Vines.—Vines in pots that are to be started into growth at once may now be repotted or top-dressed, according as is necessary. If it is considered that the receptacles in which the vine is growing is too small, it should be placed in a larger pot. The compost should consist of good, turfy loam mixed with bone meal, mortar rubble or broken plaster. Use loam that has been stored in a dry place and make it moderately firm by ramming, this being one of the secrets of success. It is not advisable to use manure at this stage; food may be supplied when it is noticed that the vines need some assistance. Both the pot and the drainage materials should be scrupulously clean, and the latter should be arranged carefully in position. The vines should be potted sufficiently deep in the pot to allow room for water and also ample space for applying top-dressings of rich materials during the season of active growth. When the vines are arranged in position, tie the rods in a loop, which will cause them to break more evenly.

Cleansing Fruit Houses. — The work of pruning and cleansing fruit houses should now be proceeded with, and where insect pests have been troublesome this work cannot be too carefully carried out. Mealy bug and red spider are two of the worst enemies the grower has to contend with in the cultivation of indoor fruits, and if either of these pests is present means should be taken to destroy it. The former may be destroyed in vineries by cyaniding the house, using two ounces of sodium cyanide to each one thousand square feet, and the cyaniding should be done on two occasions, once before pruning and again after. All loose bark should be removed, after which the vines should be washed thoroughly with a soapy insecticide such as Gishurst's compound, and the washing repeated at intervals in bad cases. As mealy bug hides in crevices on walls and trellises, the house should be painted and the walls limewashed, adding a pint of paraffin to every pailful of wash. In case some of the bug should escape destruction a careful watch should be kept in the spring, when the vines are breaking into growth, and any of the pests seen destroyed by methylated spirits applied by means of a small brush.

PLANTS UNDER GLASS.

By John Coutts, Assistant Curator, Royal Botanic Gardens, Kew.

Watering and Ventilating.—Whenever possible, watering should be done during the forenoon, as this will allow time for superfluous moisture to dry up before night; this early watering is specially necessary in houses where little fire-heat is used. With the present scarcity of fuel, this is of prime importance, for if plants are kept in a fairly dry atmosphere, and on the dry side at the roots, they will withstand fairly low temperatures for considerable periods without suffering harm. During periods of cold weather when much fire-heat is necessary, it is important to keep the wall surfaces, paths, etc., in close proximity to the water-pipes well-damped, especially late in the afternoon and first thing in the morning, as a dry atmosphere favours the spread of insect pests. Every favourable opportunity should be taken to ventilate cool houses, even if only for a very short period, for it is a great advantage to promote a circulation of fresh air, but cold draughts must be guarded against by observing the direction of the wind and opening the ventilators on the sheltered side of the house. The same remarks apply to cold and heated frames. As cold frames generally shelter plants that are almost hardy, it is important that they are ventilated freely on every favourable occasion; in many cases the lights may be removed altogether for a few hours during fine days. All decaying leaves should be picked off and everything kept sweet and clean.

Nandina domestica.—This is a very graceful and useful plant for greenhouse or house decoration and deserves to be more generally selected for this purpose, as it grows freely in an unheated house. Small plants are excellent for general decorative purposes. Specimens planted out in a cool conservatory are very decorative. Although this plant succeeds out-of-doors in the west and produces its white flowers, it seldom, if ever, sets its red fruits in this country, even when grown indoors. It is easily raised from seeds or may be propagated from cuttings formed of the ripened shoots, the cuttings rooting readily in sandy soil, under a bell glass in a cool greenhouse.

Violets.—Plants in frames should be ventilated freely on every possible occasion, removing the lights entirely during fine days. The soil between the plants should be stirred on frequent occasions, and all dead and decaying leaves removed regularly. Violets in pots are very useful for the unheated greenhouse or for placing in dwelling houses. In the greenhouse it is very important that a moist atmosphere be maintained and that the roots never suffer from dryness, for neglect in this respect favours attacks of red spider.

Tibouchina semidecandra (syn. Pleroma macrantha).—This beautiful plant has been in bloom for at least six weeks and will continue to produce its large violet-blue flowers for several weeks to come. Planted out in a bed or border it is ideal for clothing the rafters or back wall of a conservatory. When it has covered its allotted space the shoots should be pruned hard back sometime during February. Grown in pots, this Tibouchina makes an excellent subject for furnishing the plant stages, flowering freely in six-inch pots. Stock for this purpose should be raised from cuttings inserted early in the New Year; the cuttings will root readily in a case furnished with slight bottom-heat. The long-jointed growths should be stopped at every leaf; if this is done and the plants grown in perfectly cool conditions, compact, bushy specimens will be obtained. To further this end the plants should be stood out-of-doors during the summer. By growing them on for several years large specimens may be had in pots or tubs.

Begonia Haageana.—This Begonia, and its variety Drostii, somewhat resembles B. echinosepala but it has much larger leaves and flowers, the latter having papillose sepals as in the case of B. echinosepala. It is equally as useful as B. echinosepala and succeeds under similar treatment.

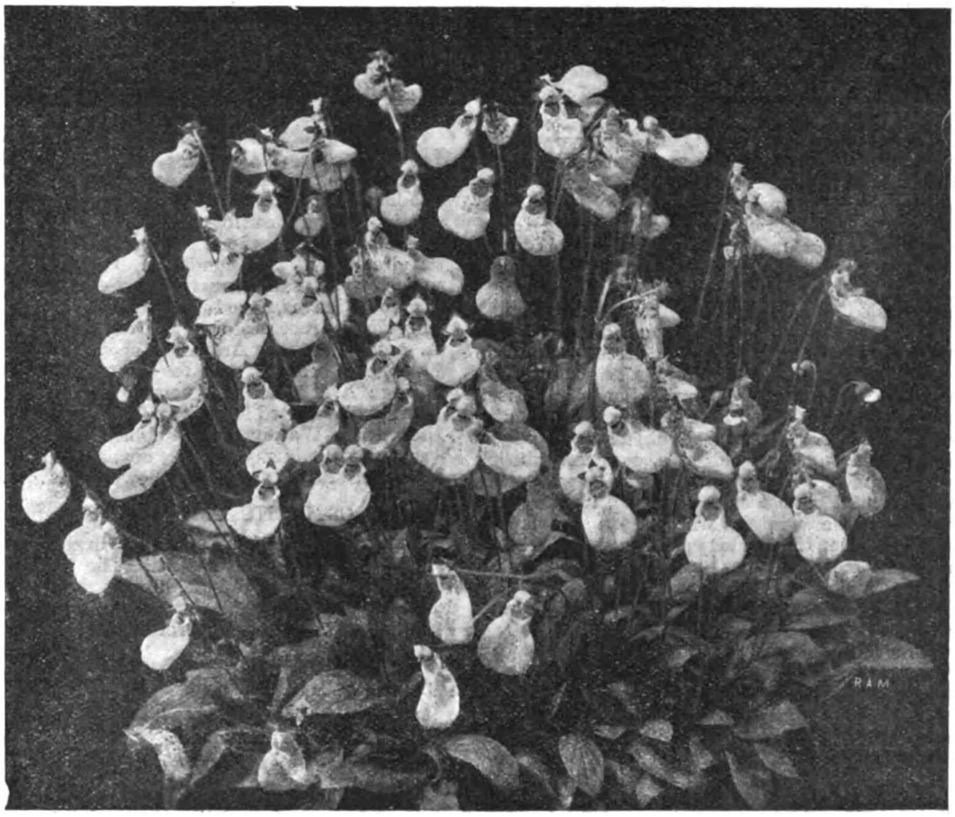


FIG. 196.—CALCEOLARIA JOHN INNES.
(see p. 446).

FOR NORTHERN GARDENERS.

By A. T. Harrison, Gardener to the Marquis of Ailsa, Culzean Castle, Maybole, Ayrshire.

Chrysanthemums.—The bulk of the earlier section of pot Chrysanthemums are getting past their best, and so soon as cuttings are to be had, a start should be made with the propagating of next year's stock of plants. A good grower was once asked when was the best time to insert the cuttings, and his answer was, "whenever you can obtain them after the flowers are opened." Some very desirable varieties are shy in producing cuttings; these should be given a top-dressing of rich soil, and kept in the warmer end of the house to encourage the production of young growths after the flower stems have been cut down. In extreme cases the stools may be shaken out and repotted, but this is only advisable when the usual method of increase is not possible.

Vineries.—The pruning of the vines and cleansing of the houses should be proceeded with so soon after this date as circumstances will permit. Any Grapes still hanging may now be cut and kept for some time in a suitable room, by inserting the cut stems in bottles containing water. Arrange the bottles in a sloping position on the shelf so that the bunches will hang clear of the shelf. If mealy bug has been troublesome and all other means have failed to eradicate this pest, the vinery may now be fumigated with cyanide on two or three occasions, taking the greatest care to observe the instructions so often repeated, to be outside the door of the house before the gas has been liberated by the combination of the two chemicals, and not to re-enter the house on any pretext for several hours. In addition to this cyaniding, the vines should be cleansed carefully and have all loose bark removed; in the case of old rods, which may show cavities where mealy bugs may remain safe from attack, these should be filled with a mixture of putty and white lead; the latter material will harden the mixture and close the apertures so that no refuge remains. The rods should then be scrubbed with strong soapy water, and when dry may be gone over with Gishurst compound, which is very effectual in keeping red spider, etc., in subjection. So soon as the rods and vinery have been cleansed thoroughly, attention should be turned to the border, and if no cause for dissatisfaction has occurred during the season, all that will be required is to remove the surface soil, taking therewith all refuse, and apply a top-dressing of turfy loam mixed with basic slag, and a dusting of sulphate of potash at the rate of four ounces of the former and two ounces of the latter per square yard of surface. If, however, the borders have not been satisfactory, the old soil should be removed carefully, preserving the roots from damage either by drought or abrasions. After making sure that the drainage is in perfect working order, the new soil should be placed in position, replanting the roots among the new compost as the work proceeds and making it firm.

BOG GARDEN.

CALCEOLARIA JOHN INNES.

THIS hybrid Calceolaria (Fig. 196) was raised some years ago from C. biflora (syn. plantaginea) × C. polyrrhiza, at the John Innes Horticultural Institute, and is a plant of much merit.

In moderately damp soil near the water it has withstood over 20° of frost here, and, while it does not spread nearly so much as C. polyrrhiza, it has a very similar leafage and much finer flowers. The latter are borne in pairs on eight-inch stems. They are fully an inch long, widening to a wedge-shaped pouch, and the colour is a warm yellow with a few crimson specks.

This Calceolaria is by no means difficult, often doing well in a cool border, the soil of which has been enriched with a little leaf-mould, but under such conditions some light shade from the hottest sun appears to be desirable.

In or near the bog it should have free drainage and a slightly elevated root-run of stony material. *J.*

OURISIA COCCINEA.

THIS is a beautiful plant, but rather uncertain regarding its success. Various methods of treatment have been advocated from time to time, and it would appear that each grower must solve the problem for himself. Having found the right spot and soil, the plant should be left alone, when its full beauty will be revealed.

O. coccinea is of a creeping habit, with tufts of crinkled leaves, four inches or five inches high. The flower stems are about eight inches to twelve inches long, and plants in a thriving condition will bear a dozen or more of its bright, crimson flowers. The species is quite hardy; it is a native of Chili. The chief factors in the cultivation of this desirable subject are partial shade and sufficient moisture, especially during the summer. When growing by the water-side and treated almost as an aquatic, it often dies through the winter, whereas in a slightly drier position it would succeed, provided the needful moisture was available in summer, and this could be accomplished by affording liberal waterings whenever the weather was dry.

The finest specimen of the plant I ever saw was about two feet square, and was growing in a mixture of peat and leaf-mould. The position was a raised one and facing north, but the grower saw that it had plenty of water throughout the summer. *T. W. B.*

OXYCOCCUS MACROCARPUS.

THE American Cranberry is a small, decumbent shrub that should be planted in a moist position in the bog garden. The flowers are borne on erect branches in spring, followed in autumn by large, fleshy berries.

The plant grows naturally in swampy ground, yet it will succeed in a peaty border where a good deal of moisture is present, but under such conditions is not so happy as when in the bog garden.

It is easily propagated by means of cuttings rooted under a bell-glass, or the plant may be divided, when it will be found that the long, creeping stems are very often rooted. *F. W. G.*

ASTILBES.

ASTILBES are valuable plants for the water-side; they are also excellent for half-shaded borders, provided the situation is fairly moist, and many an odd corner may be made attractive by planting a combination of Astilbes and Primulas.

Especially good garden varieties of Astilbe include: Granat, Salmon Queen, King Albert, Pink Pearl, Amethyst, Rhineland and Beauty of Codsall.

If it is desired to increase the stock of these elegant plants, the roots may now be lifted and divided. The divisions should not be made unduly small, but each should have about half-a-dozen crowns. Abundance of leaf-mould should be worked into the soil before replanting. *F. C. Puddle.*

ALPINE GARDEN.

CORONILLA CAPPADOCICA.

THE Iberian Crown Vetch is a very delightful subject for the rock garden; the finest plant I ever saw was draping old stone steps. The roots had penetrated between the stones and found a congenial rooting-medium underneath.

This plant enjoys a sunny position and should be planted in light, sandy loam. If the position is fairly well-drained, it will prove quite hardy in most parts of the country. Cappadocica, which is sometimes known as C. iberica, is a fairly rapid grower, herbaceous, and of a neat, prostrate habit. The large, bright golden-yellow flowers are freely produced during the summer, particularly in July. This charming plant may be increased by division. *B.*

AETHIONEMAS.

THE genus Aethionema includes several excellent plants for dry, sunny positions in the rock garden. It is essential that they should be planted in well-drained soil containing plenty of grit, and once established they should be left to grow, as they dislike disturbance.

The best method of raising the plants is from seeds, which should be sown so soon as they are ripe and the seedlings grown on in small pots until they are ready for planting out in suitable positions.

Amongst the most valuable species are A. grandiflorum, a handsome, Persian species, which forms small, attractive bushes clothed with glaucous leaves, producing during June and July slender racemes of large, rosy-pink flowers; A. pulchellum, an Armenian species of similar habit, but bearing pale rosy-purple flowers in spring; A. iberideum, a very low-growing plant bearing lilac-tinted flowers in early summer; and the variety Warley Pink, a choice little plant of very dwarf, bushy habit, covered in spring with attractive rosy-pink flowers. *A. P. C.*

CAMPANULA KEWENSIS.

THIS very fine Campanula is a hybrid raised from C. excisa × C. arvatica. The flowers are of an arresting violet-blue, almost purple. The plant is very hardy, but during abnormally damp periods some protection should be afforded it. *A.*

BULB GARDEN.

STERNBERGIAS.

STERNBERGIAS produce their solid, brilliant, yellow flowers, shaped like those of Colchicums, amidst deep green glossy foliage during the darkest months of the year.

Sternbergia lutea of commerce is probably correctly named; the flowers are large and the rather broad leaves do not complete their growth until the flowering period is over. Sternbergia sicula (microphylla) has smaller flowers with pointed segments; in sunshine they open to a star-shaped flower. The leaves are darker, narrower, and complete their growth sooner than those of S. lutea. Both these flower in October and November.

Sternbergia Clusi and has very broad, leathery leaves, much like those of the Clivia. The very large flowers are freely produced in August and September. This species (? variety) comes from Palestine.

Sternbergia Fisheriana flowers in the spring. It is usually a difficult plant to flower, but this year bulbs planted on a bank formed of flints which were piled up in the course of the construction of a tennis court, are now (November 20) beginning to flower. This species (again ? variety) comes from Karabagh.

There are other species which we have not got at Burford; Sternbergia macrantha, with very large flowers produced before the leaves; S. graeca, like S. sicula, but smaller in all its parts; and S. exigua from N. Africa.

Sternbergias must be well-established to flower freely; they like a warm, well-protected position, and do well on the chalk. *William Laurence, Burford, Dorking.*

HARDY FLOWER BORDER.

PLANTS THAT SHOULD NOT BE DISTURBED AS SEEDLINGS.

CERTAIN hardy herbaceous plants, particularly such as produce solid, fleshy crowns and a comparatively small number of strong, thick roots, do not take kindly to fresh soil when lifted and transplanted as adult plants.

Campanula lactiflora is an outstanding example. In an amateur's garden with which I am acquainted, this plant grows to dimensions which astonish many who have seen the immense branches which find their way from the garden to certain midland shows, and the secret is undoubtedly that the seeds were sown in deeply-dug soil, where the plants have been allowed to remain. As, in course of time, the bed has become crowded, some plants have been lifted and transplanted. I had a few of these surplus plants some five years ago, and, later, I complained to my friend that they only attained a height of two-and-a-half feet to three feet, whereas his were six feet, seven feet and even more, the spread of the panicles being in proportion to their height. When next I visited his garden, he showed me that his own transplanted specimens were no taller than mine, and that season I gathered and sowed seeds from my own plants in a spot where, after thinning, I could allow the batch to grow undisturbed. Those plants made giants by comparison with their seed parents.

All the Oenotheras, including O. missouriensis, O. speciosa and O. acaulis, make far better plants when sown where they may remain undisturbed, and seedlings of Dictamnus Fraxinella, in both its rosy and white forms, grows and flowers with a vigour never attained by a transplanted plant.

For several years I suffered disappointment in endeavouring to get well-developed heads on Eryngium giganteum, until one season a few surplus plants at the end of a seed-bed produced precisely what I had striven to obtain by careful transplanting and nursing. Since then I have mixed my seeds with ashes from the rubbish fire, sown them thinly in shallow drills, and kept the bed clear of weeds; that is all, but I have had no further disappointments with Erynm giganteum.

Among a fairly wide range of other border plants to which the remark applies "Seed is Best," I would include Acanthus of several sorts, Anthericums, Alstroemerias, Malva moschata, Reseda alba, a very fine plant when seen in really good form, and that heavenly-blue plant, Baptisia australis. None of these plants develops so well when transplanted, unless during the tiny seedling stage, as when allowed to remain in settled permanency where it started life. Where failures attend open-air sowing they may quite probably be traced to spring sowing instead of sowing so soon as the seeds are ripe. *A. J. M.*

FLORISTS' FLOWERS.

ANEMONE-SINGLE CHRYSANTHEMUMS.

THE Anemone-centred single Chrysanthemums have the merit of being ideal amateurs' flowers for home decoration. Some are ideal in spray form, but others should be disbudded or partially disbudded. The spray varieties cannot be marketed to advantage and yet are first-class if cut and used in the home, and they will certainly appeal to the ladies of the family. The range of colours, so far, is limited, and an interesting hobby is thus open to the enthusiast who desires to extend it.

The cultural details are of the simplest, and are within any grower's capacity. The cuttings should be taken in February and March, and when rooted should be transferred to three-inch pots; the next shift should be to a five-inch pot and finally to an eight-inch or nine-inch sized pot. Each shift should be made before the plant becomes root-bound. The whole secret of Chrysanthemum growing lies in keeping the plants growing freely in the early stages.

Stopping the shoots should be done on two occasions, so soon as the plants are rooting well in five-inch pots, and again after the last shift. Staking and tying should follow in the usual way. Allow the plants all the fresh air and light possible from the start.

For the amateur who wishes to raise new varieties, the following hints may be of use. In order to keep the centre neat and compact do not cross the full-centred ones; keep to those with smaller centres. Crossing a full-centred variety on to one showing but a trace of the Anemone form will probably give good results. The variety Red Star, an ordinary single, seems to carry the Anemone factor, and a good many Anemone-centred single varieties have arisen from its use.

A list of varieties is appended; those marked * should be disbudded :—*Aphrodite, mauve-pink, centre same colour; *Bronze Thora, a pretty bronze sport from Thora; *Ceres, canary-yellow, centre a shade deeper; *Cordelia, bronze with yellow markings; Elspeth, pale mauve-pink, tipped gold; Heloise, a fascinating sport from Elspeth, much lighter in colour, with a sheen of salmon over the pink; very elegant (Fig. 195); *Kathleen May, rich velvety crimson; Mabel Weston, pure white, very beautiful; *Thora, bright rose-pink, lighter centre; and *Snow Queen, purest white. *P. Cragg, Heston.*

ORCHID NOTES AND GLEANINGS.

BRASSO-CATTLEYA MRS. J. LEEMANN.

This is a hybrid between Cattleya Dowiana aurea and Brassavola Digbyana, and was first shown by its raiser M. Maron at the R.H.S. meeting on April 22, 1902. The segments are of a very pretty shade of pale primrose, tinged with rose on the back of the sepals and margins of the petals, while the lip is greenish-yellow, tinged with lilac, with some radiating purple veins on the disc. The lip shows the unmistakable character of all the B. Digbyana hybrids in its fringing. Beautiful as this hybrid was considered in those days, it never attained the great popularity of some of the other Brassavola hybrids, owing to its colour not being a clear yellow, and its fringe not being so pronounced as in many of the others.

The rich colour in many of these Brassavola hybrids appears in the second and third generation; the Brassavola parent apparently predominates in all the primary hybrids, both in regard to colour and shape.

Upwards of seventy hybrids, of which Brasso-Cattleya Mrs. J. Leemann is a parent, have been recorded, and it has been crossed with most of the large Cattleyas, Laelio-Cattleyas, Brasso-Laelio-Cattleyas and Sophro-Cattleyas.

It will thus be seen that the offsprings of this one parent are most varied, and comprise Orchids of the brightest and deepest shades; it has also been the chief factor in the production of a most beautiful and distinct race of yellow Brasso-Cattleyas. Amongst the brightest and most deeply coloured progeny of this parent are Brasso-Cattleya Dietrichiana, B.-C. Fusilier, B.-C. Mars, B.-C. Vilmoriniana, B.-C. Massangeana, B.-C. Lady Diana, B.-C. Strathmore and others. Amongst those in which the shades of yellow are most pronounced may be named B.-C. Minerva, B.-C. Safrano, B.-C. Golden Casket, Brasso-Laelio-Cattleya Freda, B.-L.-C. Thyone and B.-L.-C. The Baroness, the last a parent of several wonderful hybrids raised at The Dell, Egham. B.-L.-C. Amber, B.-L.-C. Lemoniana and B.-L.-C. maculata have B.-C. Mrs. J. Leemann in their ancestry, through B.-L.-C. The Baroness, also those remarkable hybrids which have been shown recently. B.-L.-C. The Baroness is derived from L.-C. Ophir crossed with B.-C. Mrs. J. Leemann, and is an instance of two pale yellow parents producing a deeper colour in their progeny. As regards cultivation, these plants succeed under the precise conditions needed by the warm Cattleyas, and many are plants of free and easy growth. *J. T. B.*

INDOOR PLANTS.

ALOE GREENII.

This is one of the handsomest amd most distinct members of the genus. The glossy, deep green foliage is marked by broad, irregular, transverse bands of elongated, pale blotches, and the sinuate leaf-margins are furnished with moderately large, upcurved teeth.

Several plants have flowered this autumn at Kew, the finest specimen being planted out on a sunny rockery in the Succulent House. This plant measures almost eighteen inches in height and three feet six inches through. The leaves are three-and-a-half inches wide at the base and narrow gradually to a fine point. A flowering stem four feet long was produced and bore eight erect branches.

The flowers are rather closely-clustered on the branches and open in succession from below upwards, this giving a long flowering season.

Athough the flowers, which may best be described as a dull but not unattractive red, are not so bright as those of many other Aloes, they are exceedingly beautiful when seen with the sun shining on them.

PLANTS NEW OR NOTEWORTHY.

ASTRIDIA VELUTINA, DTR.

Some little while ago, Professor K. Dinter—whose account of a botanising trip in the region of the Klinghardt Mountains, in South Africa, is concluded in the present issue—sent us a few seeds of one of his most interesting discoveries, a species he has named Astridia (Mesembryanthemum) velutina. He also sent us a photograph, reproduced in Fig. 197, of this species. We sent some of the seeds to Kew, and some to Mr. N. E. Brown, who is the acknowledged authority on the genus (or Natural Order, as he suggests) Mesembryanthemum. In Mr. Brown's acknowledgment, he expresses thanks for the seeds and the opportunity of inspecting the photograph. He writes: "I have the plant myself, but it has not flowered with me. Professor Dinter is possibly right in referring it to a new genus, but whether it belongs to one I have made, or is a new one, I am unable to state until I know what the structure of the flower and fruit is."

A description of this species is given by Professor Dinter on page 430.

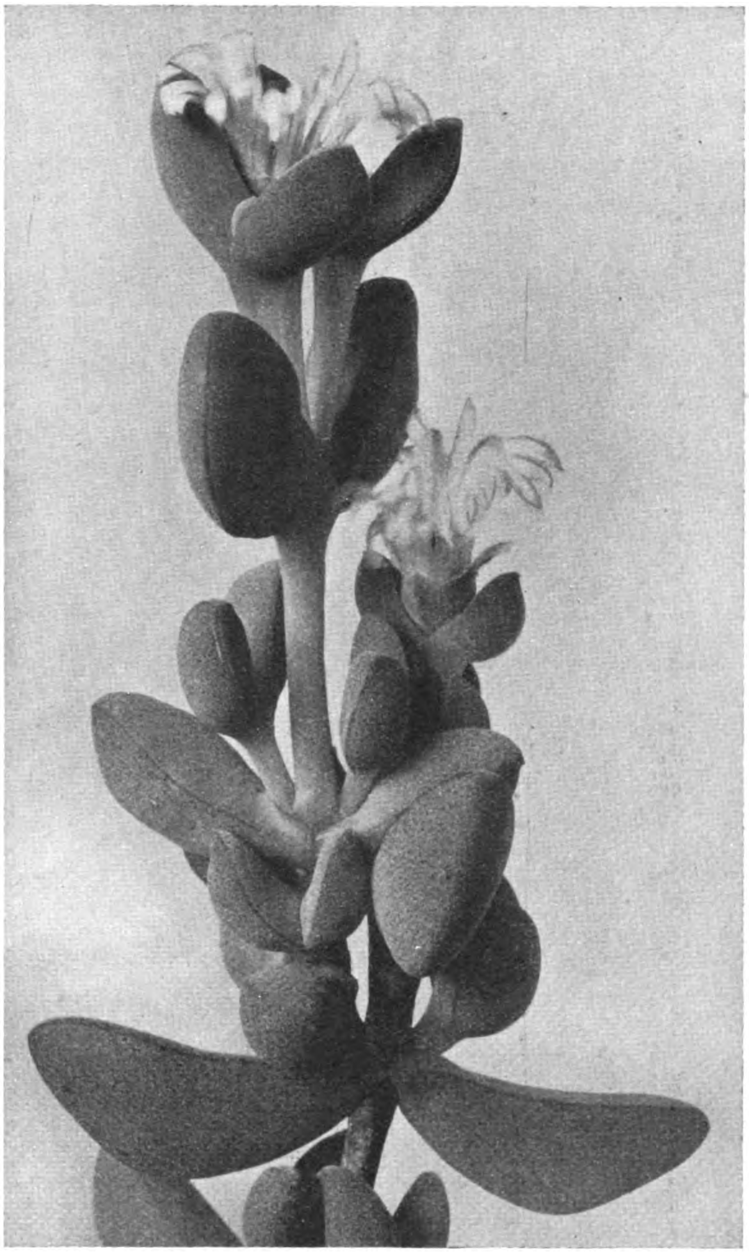


FIG. 197.—ASTRIDIA (MESEMBRYANTHEMUM) VELUTINA, DTR.

DOWNY MILDEW OF THE VINE AGAIN IN ENGLAND.

THIS fungus, Plasmopara viticola, is distinct from the common Powdery Mildew of the Vine, Uncinula necator (of which Oidium Tuckeri is the summer or conidial stage), and in this country is at present very rare.

On August 21, 1926, a vine growing on a house wall in the open in a garden at Wye, Kent, was found to be attacked, and by September 20 practically every leaf and every one of some hundred bunches of Grapes were infested.

At the time of its discovery, the disease was already well established, and different stages of its effects on the vine were visible. Leaves which were only recently infected showed, on the upper surface, patches of somewhat lighter green colour than that of the surrounding tissues; on the lower surface, corresponding to the position of these patches, were masses of the fruiting branches (conidiophores) of the fungus which were snowy white and very conspicuous (Fig. 198). They formed a "pile" or forest of minute branches projecting to such a distance from the lower leaf-surface that the general appearance was hardly consistent with the description "downy."[*]

Many leaves in the early stages of attack showed on their upper surface but little trace of discolouration, though masses of conidiophores were to be found beneath. On leaves where the fungus had been established for some time, the tissue included in the pale spots described above, was gradually killed. This process, however, goes on at different rates within the yet smaller areas which are bounded by the lesser veins. As a consequence the leaf assumes a mottled appearance, with sharply-defined angular spots varying in colour from pale green to dark brown. On the lower surface, the fungus having produced its spores on the conidiophores, becomes gradually less apparent until, on the brownest angular spots, it is dried up and is only distinguishable with a lens.

The attack of the fungus and consequently the brown angular spotting, is frequently limited to those portions of the leaf immediately adjoining the larger veins. It seems probable that this is due to the existence of better facilities, one of which is the presence of moisture, for the germination of the spores which bring about the primary infection. Lighter coloured spots, distributed over the surface and indicating more recent infection, may also be found on leaves of which the main veins are thus bordered with brown. The affected areas, in more advanced cases, become dry and brittle and the leaf shows a tendency to curl.

Young shoots and tendrils were attacked, and the fungus was producing spores on their surface.

Winter spores (oospores) were found on September 4 in the brown portions of leaves and were produced in very large numbers in leaves which had been killed completely and which had a brown and yellow appearance.[*]

At the beginning of September the Grapes were small, few being more than half-an-inch (13 mm.) in diameter. It was evident that the general attack on the flowers and fruits which had already taken place, had affected in an early state of development only certain Grapes in the bunch and had prevented them from growing out (Fig. 200). Those which had attained a diameter of half-an-inch were not found covered with conidiophores—a fact which is in accordance with the result of investigations on the Continent, which have shown that both infection and emergence of conidiophores can take place only by means of the stomata which exist in the flowers and very young fruits but are not present on the surface of more mature berries.[*] It is reported that larger Grapes (of the size of a Pea) may be attacked internally by way of their stalks, which results in brown discolouration and shrivelling.[†] This effect, coupled with absence of conidiophores, was noticed in the case of a few of the larger fruits, but the most striking feature in any one bunch of Grapes was the presence of clean and healthy berries in proximity to numerous fruitlets smothered with the fungus in its infectious, spore-bearing stage. (Fig. 200).

The sudden appearance of this serious disease of the vine in England is not so alarming as it would be if the cultivation of vines were general in this country. In the latter case the situation would have been similar to that brought about by the arrival of the Downy Mildew of the Hop within recent years in the county of Kent. The spasmodic occurrence of the vine mildew, however, is of sufficient interest to recount the facts concerning previous records. The fungus is commonly regarded as a native of the United States of America where, according to Cooke,[‡] it was first found by Schweinitz in 1834. Largely owing to the nature of the weather conditions in the viticultural areas of the United States, the disease caused comparatively slight damage, but there was reason to fear that if it were introduced into Europe much more serious harm would result. A warning to this effect was given by Cooke in 1877 at a meeting of the Scientific Committee of the Royal Horticultural Society.[§]

Actually, in the following year (1878), accordto Prillieux and others[||] it was discovered by Planchon at Coutras near Bordeaux, France, into which country it must have been imported with American vines at the time of the Phylloxera crisis. Its invasion was at first localised in the south-west of France, but rapidly spread in three or four years throughout the whole of the vineyards of France and Algeria, and eventually over the continent of Europe.

It was not until 1894 that the fungus made an appearance in England and was recorded by Cooke.[¶] Two sets of infected leaves were received by him on May 15, 1894 "from places more than 100 miles apart."[**] In considering the possibility of there being resistant varieties, he mentions one of his correspondents having reported that only one vine was attacked, and that was a different variety from others which the house contained. In the same year in a short note on the disease, Massee[††] states: "Its occurrence during the present season at several distant centres, proves that it is established amongst us." With

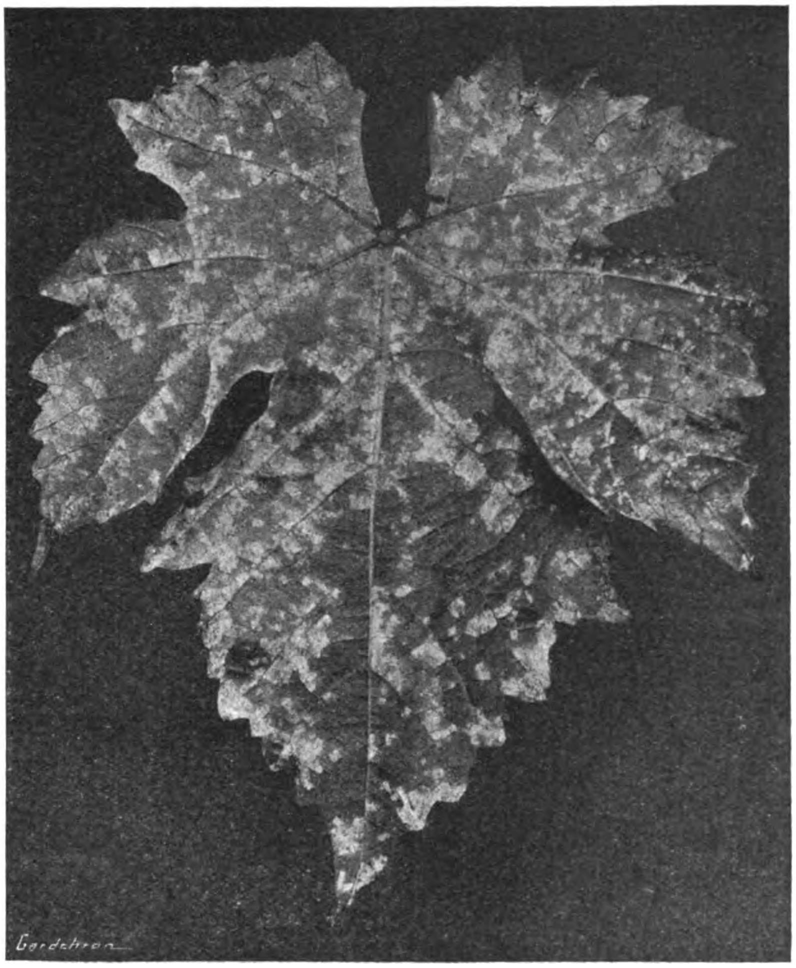


FIG. 198.—DOWNY MILDEW OF THE VINE.
Lower surface of a leaf, showing numerous white patches of the fungus; Sept. 19, 1926. 9/11ths natural size.

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[*] This description, however, for the sake of uniformity, is applied to all the mildews belonging to the family Peronosporaceae.

[*] Oospore formation is apparently not by any means general. See Istvánffi, G. de, and Pálinkás, G.; *Annales de l'institut central ampélologique royal hongrois* IV, June, 1913; pp. 84-85. The statement is here made: "In spite of all our care we have only rarely been able to find winter spores"; and, in answer to a circular letter sent to vine growers in 1911: ". . . we were sent about 2,000 leaves from 125 localities; of this material we examined 800 spots . . . but we did not find any winter spores."

[*] Istvánffi, G. de and Pálinkás, G. loc. cit. p. 29.

[†] Idem., idem. loc. cit. p. 107, Plate 2, Fig. 10.

[‡] Cooke, M. C. *Gard. Chron.*, XV, Ser. 3, p. 689, 2nd June, 1894.

[§] Cooke, M. C. On Fungoid Diseases of the Vine, Part 2. *Journ. Roy. Hort. Soc.* V. 73-76. 1879.

[||] Prillieux, E. *Maladies des Plantes agricoles, etc.* Tome 1, p. 97. Paris, n.d. Delacroix, G. and Maublanc, A. *Maladies des Plantes cultivées—Maladies parasitaires.* 2me. Edit., p. 102. Paris, 1916.

[¶] Cooke, M. C. *Gard. Chron.*, XV, Ser. 3., p. 689, 2nd June, 1894. Mr. J. Ramsbottom, of the British Museum (Natural History), informs us that he knows of no other British record.

[**] We are indebted to Miss E. M. Wakefield, Royal Botanic Gardens, Kew, for the information that one of these places was Derby. There is a specimen in the Kew Herbarium named by Cooke and labelled "Derby, May, '94."

[††] Massee, G. *Gard. Chron.*, XVI, Ser. 3, p. 75. 21st July, 1894.

regard to the first part of this statement it is possible that since as far as we know, no other British herbarium specimens exist, the "several distant centres" are the two previously mentioned by Cooke.

The latter part of the statement, together with a prophecy uttered by Cooke* in 1877, viz., "There is no reason to doubt, if once introduced into England, it would soon establish itself," has not been borne out by subsequent experience. This record, in 1894, is in fact the first and only note of the occurrence of the disease in England. A gap of thirty-two years between the two occasions on which a virulent parasite has made its appearance in this country when no measures are taken for its exclusion, is an interval of surprising length and one which is difficult to explain.

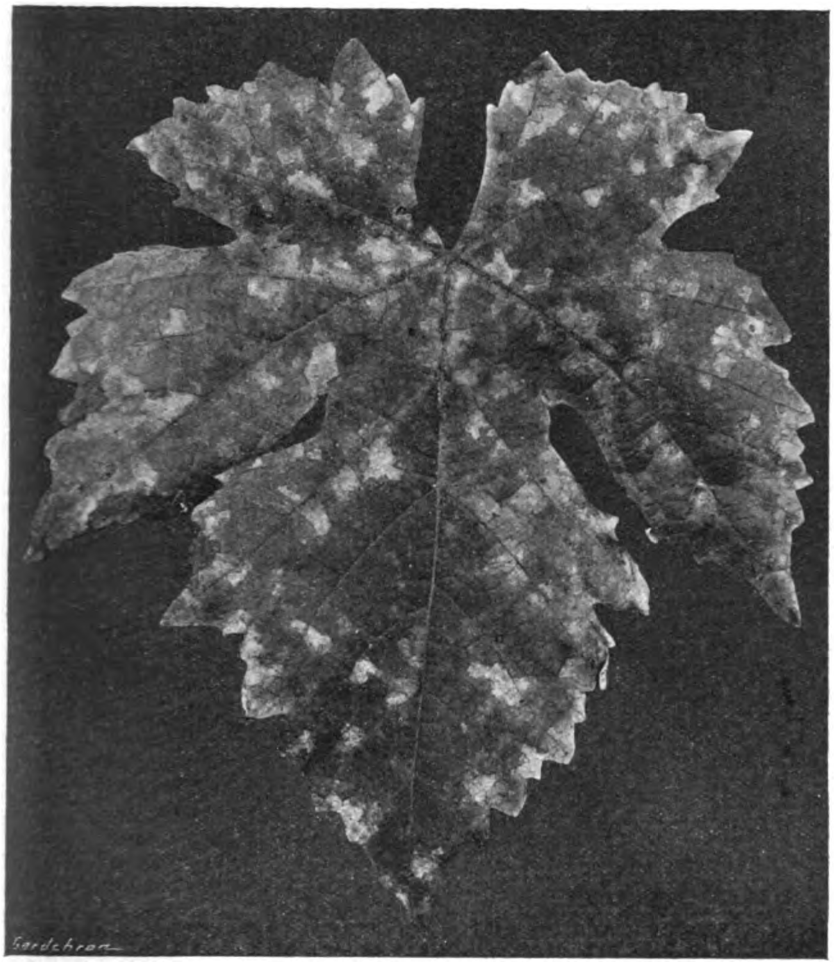

FIG. 199.—DOWNY MILDEW OF THE VINE.

Upper surface of leaf shown in Fig. 198. Brown, angular spots are becoming apparent in areas which correspond to the position of the fungus on the lower surface. 9/11ths natural size.

The vine on which the present outbreak occurred was cut down close to the ground and burned.

Within quite recent years the world-wide spread of the disease has been nearly accomplished; thus for the first time, its existence in South Africa was placed beyond dispute in 1907,† and certain precautions, such as the isolation of infected areas, were taken. In Australia, the first appearance was in 1916-1917, and considerable damage was done in the following seasons. In New Zealand the fungus has been unknown until the present year, when an outbreak at Henderson and in the surrounding district has been reported by Woodfin.*

No variety of vine is known which is immune under all conditions. The fungus attacks Vitis cordifolia, V. Labrusca, V. aestivalis and V. vulpina. In America it has long been known to attack Ampelopsis Veitchii, and recent records on this host have been made in both Germany† and France.‡

With regard to the life history of the fungus it is known to hibernate in the mycelial state,§ and in the form of winter spores (oospores) which are formed during the previous summer, not only in the brown angular spots on the leaves, but also within the shrivelled berries. Under suitable conditions in spring, the thick-walled oospores germinate and so bring about infection of the first young leaves when they are still quite small. The method of germination has been a subject of research by several investigators since 1876, and a summary of these results, as well as of their own, is given by Ravaz and Verge.|| From this it may be accepted that the oospore produces a slender outgrowth (unbranched conidiophore) at the tip of which a single large spore (conidium) is developed. The contents of this, under suitable conditions of moisture such as exist during the rains of early spring, emerge in the form of free-swimming spores (zoospores), which may be carried from the soil (where the process of germination has been going on) in splashes of rain, or by insects, to the lowermost leaves, which are then infected by way of the stomata.

The first infections of the season having been brought about in this manner, the fungus in the young leaves soon begins to reproduce itself by forming masses of branched outgrowths (conidiophores) which project from the stomata on the lower surface of the leaf in groups of four or five or more. At the tip of the ultimate branches are borne the summer spores which, in showery weather, germinate by extrusion of their contents as free-swimming zoospores. Owing to their mobility and to the enormous numbers in which they are produced, it is easy to understand that these zoospores are the means of rapid increase of the disease on a vine once attacked. The masses of fructifications and spores projecting from the lower leaf-surface constitute the snowy-white efflorescence which to the ordinary observer is known as "mildew" (Fig. 198).

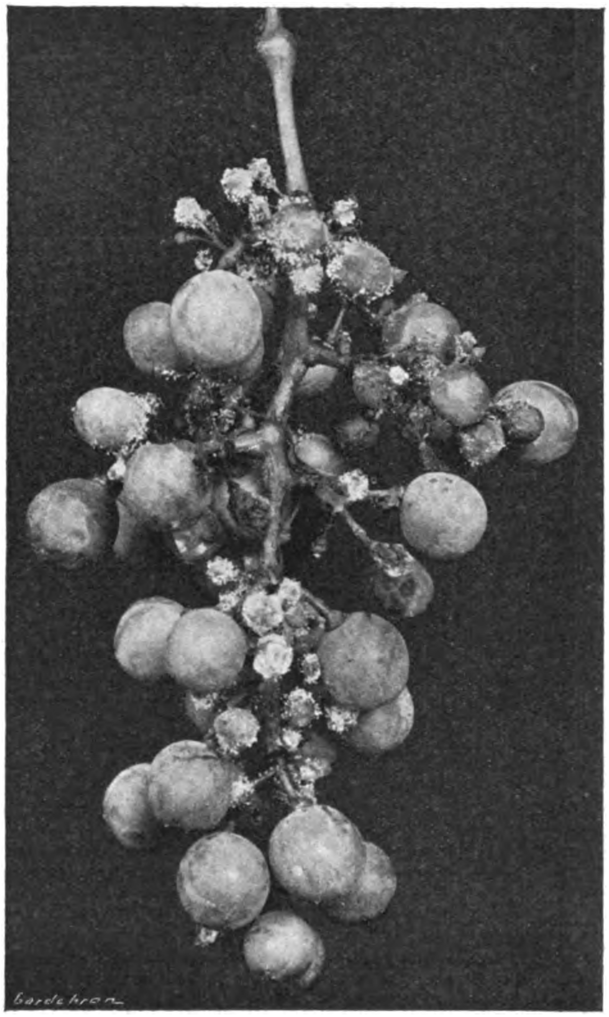

FIG. 200.—DOWNY MILDEW OF THE VINE.

A bunch of Grapes attacked by the Fungus, Sept., 1926.

A description of the measures to be adopted for the prevention of the disease is hardly required here. Bordeaux mixture, in countries where vines are grown on a large scale, has proved effective; it has been the means of salvation from disease not only of Grapes but also of other horticultural and agricultural crops in all parts of the world. Incidentally, it is of interest to mention that it was in connection with the ravages of the Downy Mildew of the Vine that this now famous fungicide was discovered and elaborated. *R. M. Harrison, and W. M. Ware, South-Eastern Agricultural College, Wye, Kent.*

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*Cooke, M. C. *loc. cit.*, 1879.

†Pole-Evans, I. B. *Transvaal Dept. Agric. Ann. Report.* 1906-7, p. 166. Pretoria, 1908. The statement by Schroeter in Engler and Prantl: *Die natürlichen Pflanzenfamilien* I, Teil. 1. Abt., p. 116, that Downy Mildew of the Vine had spread to South Africa in 1879 is reported by Pole-Evans (loc. cit. 1907-8, p. 124) to be without foundation.

*Woodfin, J. C., *New Zealand Journ. Agric.*, XXXIII, pp. 14-20, July, 1926.

†Lüstner, G. *Nachrichtenbl. Deutsch. Pflanzenschutz dienst*, IV, 10, pp. 74-75, 1924.

Zschokke, A., *loc. cit.*, IV, 12, pp. 92-93, 1924.

Muth., *loc. cit.*, V. 4, pp. 30-31, 1925.

Abstracts in *Review of App. Mycol.*, IV, 205, 395, 587 (1925).

‡Ducomet, V. *Revue de Path. végét. et d'Entomol. agric.*, XII, 129-130, 1925.

§Istvánffi, G. de and Pálinkás, G., *loc. cit.*, pp. 82-83, describe and figure buds in winter permeated with mycelium. In 1904, the first-named author had recorded the existence of hibernating mycelium.

||Ravaz, L. and Verge, G. *Bull. Soc. de Path. vég. de France*, Tome I, 51-54, 1914.

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AUTUMNAL COLOUR.

> "My way of life
> Has fall'n into the sear, the yellow leaf."

LAST year was a year of wonderful colour; this was not. Last year, autumnal tints began to appear early and were developed to their full glory by the middle of October; frosts came only at the close of the month and gales brought most of the leaves to earth before the month was out. The conditions spoken of are those which prevailed particularly in Borrowdale. In fact, our English lakeland this year, in October, offered nothing in particular—apart from the glory of the Bracken—although last year it was a feast of brilliant autumnal colour. In spite of a heavy snowfall at the beginning of the third week and hard frost at its close, trees had lost but little of their leafage; many were still green at the end of the first week in November. A heavy gale, with much rain, had little effect in despoiling them. Though Beech was brown, much of the Bracken died green, without any prior appearance of yellow. Birch, which is normally yellow at the date mentioned, was still flecked with green. Some Scarlet Oaks bore scarcely a blush. Chestnut and Sycamore, the latter especially, were shedding their leaves green. Sycamore leaves fell in great masses after the frost on October 30 and 31, but young buds on the boughs were green and seemed ready to open. Colour developed more rapidly during the second week in November and the trees were then soon stripped of their leaves. Why is it that the movement and change of chlorophyll was so great last year, so slight and tardy this?

Apparently, this year, the conditions promoted vigorous vegetative growth up to the appearance of frost and then temperatures and conditions prevailed at which change was very slow.

The meaning of the appearance of colour in autumn is too little considered. We think of the leaf as green, without asking what underlies the green. The chlorophyll granules or plastids, within which sugar and starch are formed, through the agency of sunlight, by a marvellous unrevealed process, from the very simple materials carbon-dioxide and water, contain more than the single pigment, "green" chlorophyll. Willstätter, who has examined the chlorophyll from a large number of plant species, informs us that it always contains, together with two distinct chlorophylls, yellow xanthophyll and orange-red carotin.

The xanthophyll only stands revealed in autumn, the appearance of yellow being apparently the consequence of the disappearance, not of a transformation, of the chlorophylls. The tree is a conservative system—for no food has it so hard a fight as for nitrogen and so it comes, as a rule, that the endeavour is made to return this to store, whenever possible. As chlorophyll contains a fair proportion of nitrogen, we can appreciate the thrift displayed in the process—whatever may be its nature—whereby the green colouring matter is taken to pieces and the nitrogen put by as a reserve for renewed growth in the spring. Protein materials are dealt with similarly and often converted into oils and resins at the ripening period. This year, the process has been so long delayed that changes of the character contemplated have not taken place to the usual extent and the tree has, more or less, lost its opportunity of recovering from its leaves, as so many of these have fallen green.

In not a few species, as green disappears, red appears—so consistently that it is difficult to believe that it is otherwise than genetically derived from the green. Ampelopsis is a particularly noteworthy case; the leaves usually turn to a most brilliant red in early autumn. Everything depends upon the conditions, however; if they be such as to promote continued growth, red appears only late, and change is but partial. Without being characteristic red may appear in almost any species, yet there must be special conditions or influences to determine its formation; this is shown by the existence of red and yellow varieties of the same species—Dog Wood (stem) is an example. This year, in dry situations, leaves of the Horse Chestnut were often a brilliant red; they are usually yellow at the fall.

A distinction is to be drawn between the appearance of red in leaves and in berries. The leaf red apparently is always a red of the anthocyan class, but the berry is more often coloured red by carotin. Whether this be a mere survival or formed at the ripening stage is unknown—the amount of carotin present in the chlorophyll plastid is usually small. Most leaves change from yellow to green in autumn without any appearance of red; when the green pigment is resolved, the xanthophyll, its companion, is free to shine forth in all its purity.

Owing to the manner in which yellow and red are brought into evidence at the ripening period, the fall is a time at which the call is more urgent than at any other to consider the meaning of their presence *in constant association with the two chlorophylls.* Carotin is a complex hydrocarbon; xanthophyll is oxygenated and probably closely related to carotin. Both are unstable and easily oxidised, as separate substances, yet in the plant, in association with the two chlorophylls, they seem to be subject to little if any change.

The chlorophyll granule, we know, is a most marvellous factory in which oxygen is constantly being produced during the period when light acts upon the leaf. That this oxygen does not react upon the colouring matters within the plastid nor upon the sugars which are formed within it is more than remarkable. The mechanism is clearly one within which and whereby oxidation is stayed. The manner in which oxidation may be prevented is now well-known to us; one of the most striking instances is that afforded by hydrogen-cyanide or prussic acid. There is every reason to believe that the poisonous action of this substance is due to the effect it has in preventing oxidation at certain nerve centres.

To take another case, yeast has normally the power of causing the evolution of oxygen from a solution of hydrogen peroxide; add a little hydrogen cyanide and the separation of oxygen ceases. Many such cases are known, in which two substances, each easily oxidised apart, in the separate state, are unoxidisable in admixture. It is probably not going too far to assume that the main office of carotin and xanthophyll in the leaf is to prevent oxidation within the chlorophyll plastid. *Henry E. Armstrong, F.R.S.*

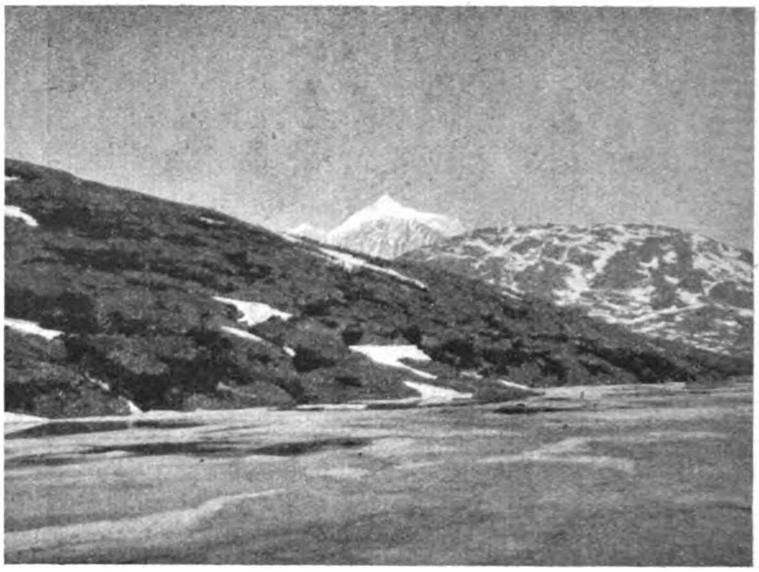


FIG. 201.—STUNTED TREE GROWTH ON THE WHITE HORSE PASS, YUKON TERRITORY; PHOTOGRAPHED IN SUMMER.

TREES AND SHRUBS ON THE PACIFIC COAST.

ONE naturally expects to find forest timber lessening in size as one travels northwards or rises towards its altitudinal limits in the mountains, but I fancy that in no part of the world is the contrast so marked as on the Pacific coast of North America. In the equable climate of Vancouver Island several species of Conifer attain extraordinary dimensions. Of these, the Douglas Fir (Pseudotsuga Douglasii) must claim pre-eminence. In places, where it is found growing in company, it forms perfectly straight, limbless trunks for the first hundred or hundred-and-fifty feet, these being surmounted by a densely-branched head fully as high again. The accompanying photograph (Fig. 202), taken in the Malahat district in the vicinity of Victoria, shows this characteristic forest growth. The so-called Red Cedar or Giant Thuya (Thuya plicata) is another Vancouvan tree of immense size, while the Balsam Fir (Abies grandis) is sometimes scarcely less tall.

A thousand miles to the north, in the Yukon Territory, the conditions are, of course, vastly different. The long, sunless winters, with their intense cold and heavy snows, sadly curtail the growing season. At three thousand feet tree life ends, and the mossy tundra stretches away towards the unknown. In the Alps, and up and down the middle reaches of the Rockies, one may see storm-stressed outposts of the forest scattered along its upper fringe. These trees, however gnarled, wind-cropped or snow-bent they may be, still bear a semblance to their sylvan brethren, but near the summit of the White Horse Pass, on the Alaskan frontier of the Yukon Territory, tree-growth is so stunted and of such Lilliputian dimensions, that the species can scarcely be recognised (Fig. 201). Here, a man may stand waist deep in the middle of a miniature forest. Ancient Abies, that in lower latitudes would have formed stately specimens are now mere shrubs, shrinking for shelter behind a lowly rock. One of these tiny Firs was, I think, the Mountain Balsam (Abies lasiocarpa), a tree which, under happier circumstances, attains a height of a hundred feet or more. In this locality a full-grown, cone-bearing specimen is barely a yard high, the fruit, leaves and trunk all being proportionately minute.

During the days of the headlong gold-rush in the late nineties of last century, the White Horse Pass was a dreaded obstacle on the perilous journey to Klondyke. Now a railroad spans the roaring torrents and winds its way over the chilly mountain passes. Seated in comfort, from the window of one's carriage one can still see relics of the old trail, and, here and there a ruined shack, or perhaps a grave-stone, to mark the spot where some gold-seeker had finally abandoned his quest. Along the canyon walls, and in the trough of the valley leading up from Skagway, the Sitka Alder (Alnus sitchensis) forms a scrub, in the midst of which are scattered a few Birch trees—probably Betula alaskana. Higher up, one meets an aberrant member of this genus—the bush-like, pigmy Birch (B. glandulosa). Its small, orbicular leaves, with deeply crenulated margin, gives it a characteristic and interesting appearance. It grows in boggy localities and must surely be numbered amongst the hardiest of all shrubs, since it is found, together with a few dwarf Willows, at the very edge of the timber line. Even in midsummer, as I saw for myself, the mountain tarns are often filmed with ice, while under the stars of the endless winter night there may be anything up to a hundred or more degrees of frost.

I was so engrossed in collecting plants and seeds on the White Horse Pass that I suppose I must have wandered out of earshot. At any rate, I did not hear the warning bell, and when I returned to the signal station, where the train had halted, I found that it had gone! Happily, my seemingly eccentric behaviour at every stopping place had made me a more or less conspicuous member of the party, and someone noticed my absence. Realising that this train was the only possible means I had of catching the south-bound steamer, my unknown American friend immediately notified the guard. I need hardly say the railroad officials were not best pleased at having to stop and back the train up the steep incline for three or four miles. The conductor seemed strongly of the opinion that a few dwarf Willows were not worth all this fuss and trouble—but then, of course, he may not have been a gardener!

These little Willows are now safe in my Kentish garden, happily asleep for the winter. They are still unidentified—I have yet to meet the truthful man who can tell me anything about Willows—but I shrewdly suspect one, fully three inches high, may prove to be the Dwarf Willow, Salix nivalis. The parent of another had pretty brownish catkins and in flower was quite an attractive and ornamental shrub. *Collingwood Ingram.*

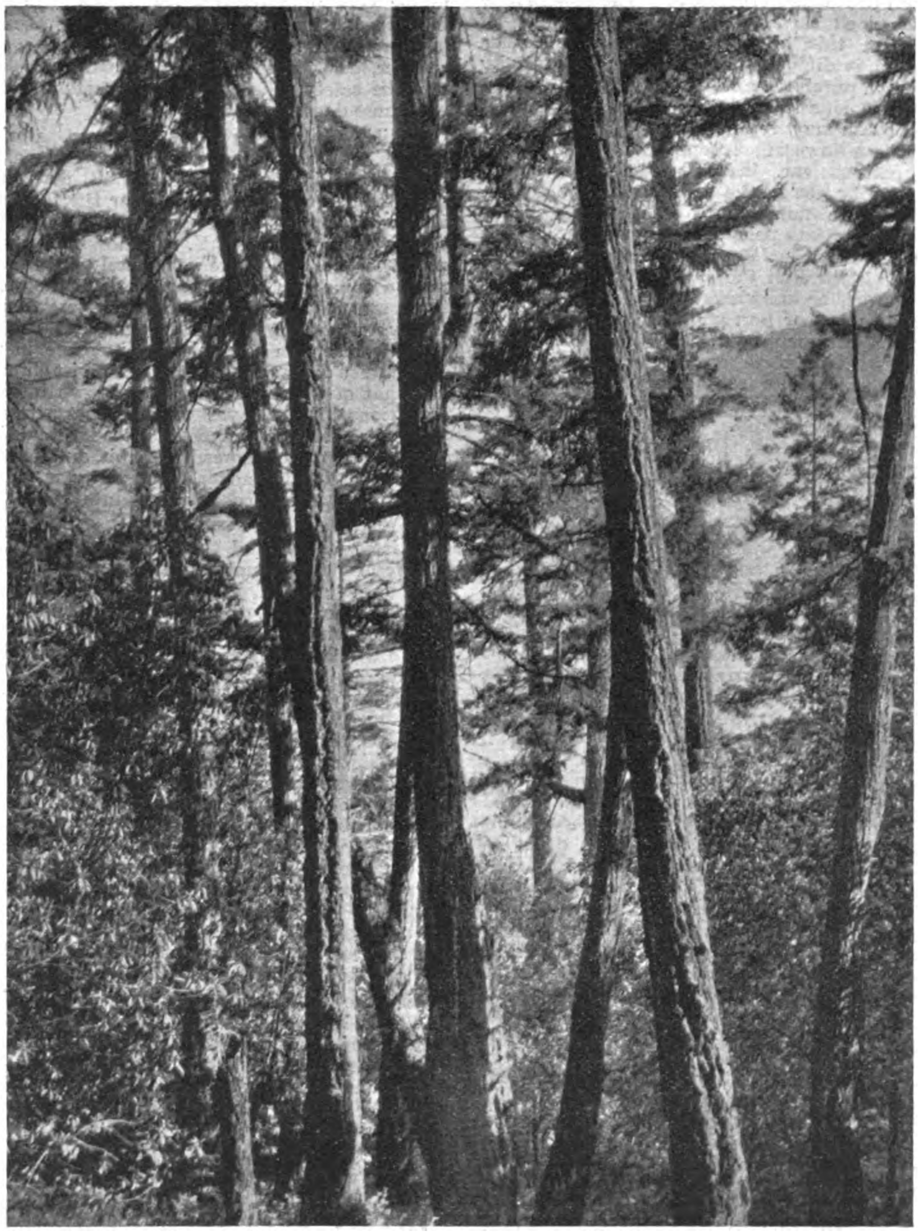


FIG. 202.—TALL DOUGLAS FIR TREES IN THE MALAHAT DISTRICT, VANCOUVER ISLAND.

NOTES FROM GLASNEVIN.

November Crocuses.

Although not a very inspiring month in the garden, November, nevertheless, has its compensations, and not the least of these are the Crocuses. Readers of Mr. E. A. Bowles' admirable handbook of *Crocus and Colchicum* will have discovered by now, if not before, that Crocuses may be had in bloom from early autumn, through late autumn and winter, into early spring. Through September and October we had a procession of species and varieties, including C. speciosus, C. longiflorus, C. pulchellus, C. zonatus, C. medius, C. vallicola, C. nudiflorus, C. iridiflorus, etc., and now, in mid-November, though battered by wind and rain, the following species and varieties have braved the elements and opened their flowers:—

C. asturicus, a Spanish species, which normally should flower earlier, but the group under notice was replanted rather late, and hence did not become active at the usual time. It is a sturdy species, standing up well to rough weather, not so easily broken down by winds and heavy rains as its ally C. nudiflorus. In colour it is said to be variable, but the form here is lilac-purple.

C. hadriaticus var. chrysobelonicus is a Grecian Crocus of great beauty. The flowers are almost pure white, with rather faint lines at the base of the segments, outside, and a yellow throat.

C. longiflorus var. melitensis is a Maltese form of a fairly well-known autumn-flowering Crocus. The ground colour is lilac, but it differs in the purple feathering on the outside of the segments. It is a delightful little Crocus well worth a sheltered, sunny nook.

C. ochroleucus, a Syrian species, is creamy-white in colour, hardy and robust, soon making a good colony. The flowers are comparatively short, that is, they do not produce so much of the tube above the soil as some other species. The segments likewise are short, hence the wind does not affect them to the same extent, and the flowers stand erect and uninjured when other species are laid low.

C. Salzmannii var. erectophyllus seems to be a sturdier and deeper-coloured form than the type, if, indeed, it is a form of Salzmannii. The flowers are lilac-coloured, and, whatever its origin, it is, on the whole, a better garden Crocus.

C. sativus var. Cartwrightianus is an excellent variety for naturalising on the rock garden or in grass. A colony here, at the base of an old Larch tree, is a feature every November. The position is exceptionally dry and by no means sunny in November, nevertheless, this variety has flourished and increased. The flowers are smaller than in many other autumnal species, but are produced in such profusion that lack of size is no demerit. The colour is bright lilac. Whether from its position or from the compact form of the flowers, this Crocus is rarely injured by unfavourable weather, and is, in my opinion, one of the most satisfactory of the late autumn bloomers.

C. sativus var. Elwesii is another form of the Saffron Crocus flowering now. The flowers may be described as lilac, but the exact shade of colour in this, and indeed, in many other Crocuses, is difficult to define, and is usually gnored in purely botanical descriptions. Neveritheless, colour is important in the garden and C. s. Elwesii may well be included in a collection of autumn-flowering Crocuses.

C. sativus var. Haussknechtii is a rather frail variety not in the front rank as a garden Crocus. The flowers are small, dull white, and the segments poor in substance. It is very susceptible to inclement weather conditions, and should have all the shelter available in the rock garden or elsewhere outside. It is better grown in a pot or pan and flowered in a frame or unheated greenhouse.

C. Tournefortii is making a brave show now, and is quite satisfactory in the open. It is a bright little species, here at least, enduring bad weather very well. The bright lilac flowers are freely produced; the segments are short, opening widely in exposure to sun. It is an excellent species for the rock garden or alpine house.

LATE AUTUMN COLOUR.

Autumn tints were not conspicuous here during September and October, but in some instances, November has seen an improvement. One of the most beautiful trees at the present time is Nothofagus obliqua, one of the Chilian Beeches. A specimen here, forty feet high, with graceful, semi-pendulous branchlets, is beautiful in its orange-red foliage. This appears to be a satisfactory tree, growing rapidly and maintaining a good shape without attention.

The timber is reputed to be valuable, and it is to be hoped seeds may be introduced in quantity sufficient to try it under silvicultural conditions. Plantations of some size throughout the country would be of rare scenic effect as well as of economic importance. Professor Henry in *Trees of Great Britain and Ireland*, Vol. III, p. 553, suggests that the failure of young trees at Colesborne may have been due to the presence of lime in the soil, but here, where Douglas Fir fails on that account, Nothofagus obliqua flourishes.

Cotoneaster Dielsiana var. elegans (W. 1287), stands out conspicuously at the present moment among others of its class. About seven feet high, it is now very pleasing in its red and orange foliage and reddish-orange fruits. It differs much from the type species, and Rehder and Wilson (*Plantae Wilsonianae*, Vol. I, p. 166) have remarked on its affinities with C. Franchetii and C. Zabelii, both of which are excellent shrubs. For brilliance of colour of fruit the type, C. Dielsiana, also known as C. applanata, is superior, but in this case the leaves fall early and without showing any remarkable colour.

The Medlars (Mespilus germanica) are deserving of more attention by planters. Although not conspicuous during summer, they are adaptable to many situations where a larger tree would be out of place. At present, several old, round-headed specimens are strikingly effective in their mantle of golden-yellow leaves, and, as they happen to be in proximity to the Cotoneasters, both deciduous and evergreen, they accord well with the warmer tints of their leaves and fruits, making this part of Glasnevin one of the most interesting at this season.

Berberis mekongensis, a recent introduction from China, deserves notice on account of the beautiful orange and red colouring of the leaves, coupled with the bright red hue of the young shoots. It was collected by Mr. G. Forrest on the Mekong-Yangtze divide, Yunnan, in 1914, at an altitude of 12,000 feet. It is said to fruit freely but has not yet done so here. *J. W. Besant.*

TREES AND SHRUBS.

YUCCA FILAMENTOSA

THE Yucca is something of a paradox amongst hardy plants, for it is a shrub, albeit of most un-shrub-like appearance, which bears flowers like those of a Lily. Considering that the home of the Yucca is the coastal region of the south-eastern United States of America, it ought not to be hardy in this country, but it is, except under very unfavourable conditions. As may be expected from a plant with such tough, leathery leaves, the Yucca is a splendid drought-resister, and, unless grown in a wet, cold soil, may be safely relied upon to withstand thirty and more degrees of frost.

While the more vigorous Yucca gloriosa is the one mostly grown in our gardens, Y. filamentosa is more graceful, and, as a rule, a better garden plant, if only for the fact that it flowers much more regularly. It differs chiefly from the rigid Y. gloriosa in its more pliant leaves, which are very rarely terminated with a spine, and in the curling filaments which break away from the sides of the leaves, though this is not entirely a constant character, in fact, there is often an appreciable difference in the appearance of leaves produced in a moist climate, like that of Cornwall, and those grown in drier conditions. The leaves of plants growing in the moist climate are often broader and less erect, giving a more spreading habit, and more of the thread-like filaments break away from the leaves than is the case with plants in a drier region.

It is usually stated that, unlike Y. gloriosa, the species under notice does not produce its stem above ground, but, while this is generally so, every now and then it will be found that in an old clump of Y. filamentosa the middle shoots will have distinct stems, up to two feet above ground.

The Supplementary Illustration presented with this issue, a fine group in the gardens of R. Windsor Rickards, Esq., Usk, Monmouthshire, shows that Yucca filamentosa is exceedingly effective when the plants are grouped, and the maximum effect is generally obtained when the grouping is done in a shrubbery border with a background of dark green foliaged shrubs. The tropical appearance of its foliage renders it especially suitable for sub-tropical gardening, when it is admirable in association with Palms and Tree Ferns. Although it has no alpine affinities, I have, on several occasions, seen its effective use on the higher ledges of the rock garden.

Like the other Yuccas, Y. filamentosa thrives best in a light, loamy soil, though it will grow satisfactorily in any soil that is well-drained. Established clumps that have become too congested may safely be divided and the portions replanted in the late spring, just as growth recommences. *A. C. B.*

TWENTY DAYS IN A BOTANIST'S PARADISE.

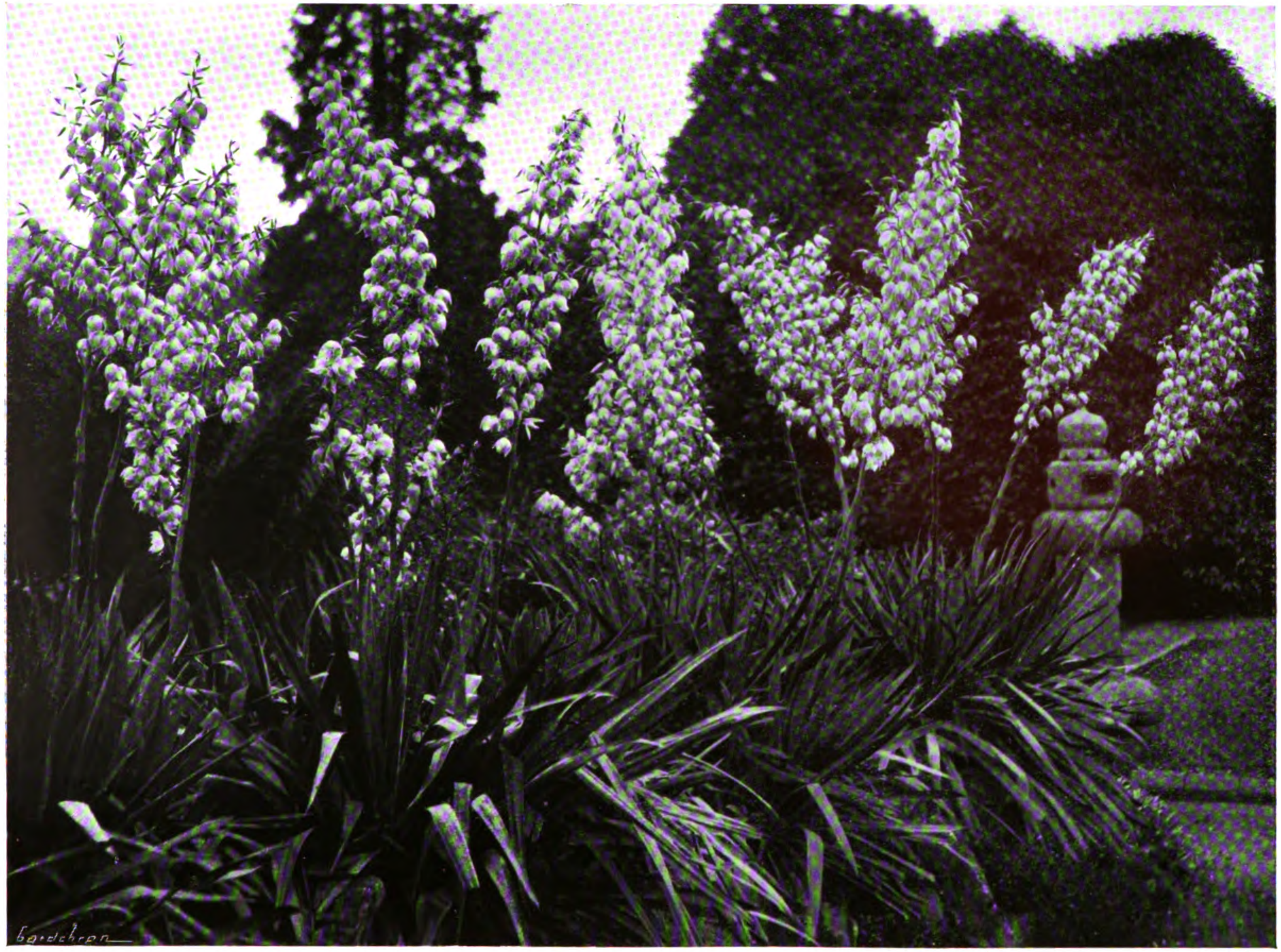
(*Concluded from page* 431).

ONE of my best discoveries in the Klinghardt Mountains was that of an Echidnopsis (Asclepiad); it was only a single specimen (to my regret), but it arrived safely at Lichtenstein, in the mountains near Windhoek, where its three branches had grown to three columns of fifteen inches in length, and rather more than one inch in thickness, when I saw it again a few months later. It flowered there during my absence, but the flower had been preserved in spirit, so that I could make a diagnosis. This discovery is the more interesting, as hitherto all the other known species were found on the African east coast. Of the genus Stapelia, I found a very beautiful kind, Stapelia Ruschiana, Dtr., belonging to the interesting section Caruncularia, and nearly allied to S. pedunculata, Mass. Of other Stapeliads I found a second new Trichocaulon of the spineless group, which I called T. perlatum; its small, flat flowers are of a light bluish hue which is caused by thickly-set colourless papilae.

When I changed camp to the southern side of the mountain, I established it below a big Aloe at the foot of the Sargdeckel, a very steep phonolitic ridge of about four hundred feet, and one of the stormiest places I could find. The first thing we did was to construct a shelter against the sand storm by building a circular wall of bushes of Mesembryanthemum gigas which we found in the vicinity in enormous masses. It is a bushy shrub so high as three feet with fat leaves and large, terminal cymes of insignificant flowers. Without much running about we had plenty of work here. There were growing on the steep slope close by Pelargonium alternans by hundreds, a sturdy, erect, several-stemmed bush, three feet high, with branches two inches thick and large cymes of inconspicuous flowers. A real ornament is P. spinosum, a large, many-stemmed kind with pale, brownish bark, leaves very similar to those of P. peltatum on very long, strong petioles and very showy umbels of red and rosy-striped flowers, looking like those of the above-mentioned Cape species. I found hills literally covered by this species. Perhaps the most queer looking species is P. mirabile, Dtr. It grows mostly on the ridges and tops of the hills and forms a chestnut-brown, hemispheric cushion of geometrical regularity. It is single-stemmed. but the stem divides close to the ground into several main branches which divide and re-divide so regularly that the surface of such a cushion of one foot high consists of at least a thousand branches of about lead-pencil thickness. The distribution of these thick and extremely short branches is so exact that, although there are on 100 square centimetres so many as ninety branch-ends, not one disturbs its neighbour.

Not very agreeable vegetables are the three kinds of Euphorbias (sect. Tirucalli) which grew in quantity in the stony sandfield close by our camping place. E. Dregeana grows up to six feet high and consists of about a dozen equally thick, bluish-green stems with only very deciduous, rudimentary leaf scales, crowned by a rather loose panicle of yellowish-green cyathia. E. gummifera, which covers vast areas of the south of South-west Africa, was formerly tapped for the sake of its latex, which contains some rubber, but likewise so much resin that the balls formed of the coagulated milk sap soon become as hard as clay balls. Although it proved to be thoroughly useless stuff, it is said to have been exported for the adulteration of good caoutchouc from Port Nolloth. It is a pity we have no means for separating resin from rubber. The wonderfully strong milky fibre of the rind may become useful some day for paper manufacture. I found also much rich oil in the rather large seeds of the Euphorbias of this section, but as it is very poisonous it could be used for technical purposes only.

One of the showiest shrubs in the Klinghardt Mountains is Microloma Schaferi, Dtr., sp. nov. (Asclepiad) allied to the climbing M. calycina, but forming a spherical, very intricate, shrub of three feet diameter, covered by masses of blood-red, starry flowers, Very common is Hermannia patellicalyx, also a very intricate shrub with golden, drooping, bell-flowers. On the roots of Tripteris and Felicia (Compositae) I found on several occasions the splendid blood-red parasite Hyobanche sanguinea. It had hitherto not been found in South-west Africa. For the first time here I collected in flower a member of the curious Portulacaceous genus Ceraria (C. Schaferi), Eng. and Schltr.). I knew it already from Halenberg without flowers, but took it for a kind of Zygophyllum. Although Thesium is described as having nut-like, dry fruits, I found a species, a five-feet-high, virgate shrub with soft, white, slimy berries like those of a Viscum (Thesium viscibaccatum, Dtr., 4006). Other shrubs characteristic of the flora of the Klinghardt Mountains are half-a-dozen Zygo-



YUCCA FILAMENTOSA AT USK PRIORY, MONMOUTH.

phyllums, three Lebeckias (Leguminosae), the leafless Umbellifer, Pituranthos aphyllus, and seedlings of it with well-developed leaves; Cissampelos capensis, Thub.; several Berkheyas (Compositae), several Pteronias (Compositae), Justicias (Acanthaceae), Eriocephalus (Compositae), and last, but not least, the striking Sutherlandia frutescens (Leguminosae) in full flower.

There are comparatively few grasses to be seen, besides a very tall grass (six feet) with a preference for growing close to the deep, sandy bases of hills, which seems to be a Danthonia; there are several Aristidas with feathery plumes, and the thorny Eragrostis spinosa, seedlings of which have well developed leaves; and in a ravine I found a small patch of Pappophorum scabrum and Fingerhuthia africana, this latter only two inches high, but nevertheless flowering.

An ascent of the Sargdeckel proved to be a grand success. On the ridge of it—almost a plateau, of 500 metres length and forty metres breadth—we found a single-stemmed Stapeliad with an extremly strong ramification. The end branches are short, only one to two inches long, almost one inch thick and with very stout and strong, grey-tipped thorns without any trace of rudimentary leaves. There were scores of fallen flowers, but not a single fresh flower. Advancing, we found more of it, among them specimens of two feet diameter, and one foot high, with many, nay, thousands of fruits, but only a single ripe one, which contained about eighty seeds in both follicles. We counted the specimens from one end of the plateau to the other, and found more than three hundred, some of them weighing a hundredweight. Never before had I seen a Stapeliad growing so thickly, and never a well-defined area so exclusively occupied by a single species (near Omaruru, Huernia oculata, Caralluma Nebrownii, Stapelia Schinzii, Tavaresia grandiflora and Huerniopsis decipens are found on the same area). Although flowers could not be collected the whole appearance of my plant was so strange and unique that I did not hesitate to give it the new generic name of Sarcophagophilus. We filled a large bag with about a dozen of the smallest specimens we could find. It was a very heavy load to be transported on my boy's head down the steep slope to our camp, whilst I carried a number of bulbs of the fine Haemanthus splendens, which we had found growing in crevices in quantity near the top.

When we arrived below our Aloe tree, about a dozen baboons appeared on the edge of the plateau above our camp, chattering lustily. We had no previous idea of their occurrence in this perfectly waterless region, but my boys thought it very probable that they sought the watery tubers of Grielum sinuatum to quench their thirst. Besides this small pack of baboons we saw only four or five klippspringers and a rather large number of mice during the twenty days of our sojourn, but no other quadrupeds. Snakes seem to be rather rare, excepting Bitis cornuta, of which we killed one to three every day. Of the Lacertilia I saw only numerous specimens of a gecko and a few agamas. Birds are extremely rare; during the whole time we saw only two falcons, half-a-dozen crows, and a few finch-like birds. Signs of the presence of bushmen were found only in the form of a few pieces of fire-blackened ostrich shells under an overhanging rock, and these might have been a few months or a hundred years old.

There would be excellent pasture in the Klinghardt Mountains on the soft sands, if there were water! If a single rich water pool occurred in the centre, the whole of the present vegetation would be utterly destroyed by cattle within a few years. Klinghardt Mountains would then be a lost botanists' paradise. I should think it possible and very desirable to establish in its centre a little botanical observing station. Firewood is in sufficient quantity, and a corrugated-iron roof of perhaps 150 square yards would collect the necessary quantity of water for the botanist and three skilled boys and their wives, and life would be very pleasant. *Professor K. Dinter, Bautzen.*

THE PROGRESS OF ECONOMIC ENTOMOLOGY*.

With Special Reference to Australia and New Zealand.

There is a department or subdivision of the immense science of biology which is termed by some bionomics, by others ecology, both words signifying practically the same thing, that is, the study of a living organism playing its part in its natural environment in association with, or in competition with, other organisms. From the view point of evolution, the first ecological or bionomic problem was presented in Nature when the first living substance began to form, to exist and to multiply in its natural medium, which was almost certainly sea-water. From that epoch, many millions of years ago, to the present age, life has expressed itself in many thousands of diverse forms on this earth. Of the countless bionomic or ecological problems thus presented to us, perhaps the most intensely interesting are those which exhibit the interplay of the two great kingdoms of living things, the Plants and the Animals. Plants can get their food direct from inanimate nature by absorbing and making use of pure chemicals in the air, the water and the soil. Animals cannot do this, but are dependent upon plants for their nourishment, either directly, if they are vegetarian, or indirectly, if they are carnivorous; for these latter must eventually depend upon the supply of vegetarian animals for their food.

Now Economic Biology is really just this subject of Bionomics or Ecology considered in relation to man. We are concerned, in economics, with man's food supply, his crops and his herds, and his shelter supply, the great natural forests of the world which he has converted to his own use, and, unfortunately, largely destroyed in so doing. In attaining his dominance over the rest of the Animal Kingdom, man, "Nature's insurgent son," has burst in, rude and horny-handed, on the ordered beauty of Nature and has made rather a sorry mess of things from many points of view. He has unwittingly created for himself many problems which he is now almost at his wit's end to solve. One of the most pressing problems of the present day is the devastation caused to man's food supply and his forests by the enormous number of species of insects in the world. There are nearly half-a-million species of insects scientifically named and described in the world to-day, and there are certainly many thousands more still awaiting discovery and description. One might say with truth that there is no new activity which man could undertake in connection with his food supply or his forests, which would not at once provide the opportunity for one or more insects, previously of nothing more than an academic interest, to improve their chances in the struggle for existence, and to take some toll of the new facilities which man intended only for himself. Economic entomology is the science which studies these problems and attempts to find solutions for them.

The main line of study has been the problem of how to intervene scientifically in the most successful manner, in order to prevent the huge losses caused by insects to man's food supply and forests. The last thirty years have witnessed an immense development of what we may call the *chemical* line of attack, particularly in America, where the urgency of this problem has also helped very materially to solve an allied chemical problem, the utilisation of waste products of chemical factories. So we find the crude waste oils of the petroleum wells put to good use as sprays; by-products, such as cyanamides used for the production of hydrocyanic acid gas for fumigation and, later on, for making calcium cyanide; arsenic, itself, an otherwise useless constituent of many metallic ores, used in the making of poisonous arsenical sprays; and so on.

At the present time, in those parts of the world which aim at producing the best commercial fruits, chemical spraying and fumigation have reached such a high pitch that it is difficult to see how it can be much improved except in detail. If you go into a shop to-day and compare the American or Canadian Apples now on sale, practically perfect in their shape, colour, flavour and aroma, with the wretched products of some old, unsprayed insect and fungus-ridden orchards in this country, you will understand what economic entomology has done for fruit-producing areas. Costly as it is, it is the spraying programme which makes it possible for America and the dominions to send to Europe these perfect fruits, and without it there would be no possibility of finding a market for their products.

Not only has the chemical line of attack been perfected by the utilisation of many new chemical substances, but also the *technique of application* has been revolutionised within the past few years. Perhaps the most striking instance of this is the commercial use of aeroplanes for spraying or dusting large areas. This method is especially suitable where a large area of infested crop or forest needs to be quickly treated. In America, specially designed aeroplanes are now used for dusting the Cotton crop: they are capable of flying even as low as ten feet above the crop, and, flying at a high speed, deliver the dust in a well-regulated stream. By this means it is claimed up to 1,000 acres can be efficiently dusted in the period of one hour's flight, whereas the best ground-dusting machine dusts only about thirty acres in a day. One of the most remarkable results of aeroplane dusting is the large amount of poison which adheres to the plants even under atmospheric conditions that would be deemed impossible for adherence to occur with the best of existing ground-dusting machines. It appears that a considerable portion of the observed effect is due to the positive electrical charging of particles of the dust and their coming in contact with the plants which carry a negative charge. The principles involved and their possible application also to ground-dusting machines are being investigated. Under present methods, ground-dusting has to be done only at such times as when the crop is wet with dew in order that adherence of the insecticide can be assured. Aeroplane dusting is also now in use in parts of Germany and Russia, and we may express the hope that Great Britain will not be long in following suit.

But to-night I do not wish to direct your attention to the chemical side of economic entomology, but rather to a later and even more interesting development which may be termed *biological control*. You will best understand this by reference to the Table, in which I have tried to illustrate in a very simple manner the inter-relationships which lie at the base of this problem:—

	Organism.	Relationship to Man.			
		Type.	Example.	Type.	Example.
1	Plant	Beneficial	Pear	Injurious	Prickly Pear (in Australia).
2	Insect attacking 1	Injurious	Pear-slug (Eriocampoides limacina)	Beneficial	Cochineal Insect (Dactylopius tomentosus).
3	Insect parasitic or predatory on 2	Beneficial	Ichneumon (Perilissus luteolator)	Injurious	Lady-bird (Cryptolaemus montrouzieri).
4	Secondary parasite on 3	Injurious	(Not known).	Beneficial	Braconid species.

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* The Trueman Wood Lecture, 1926, delivered before the Royal Society of Arts, by R. J. Tillyard, M.A., Sc.D. (Cantab.), D.Sc. (Sydney), F.R.S., F.L.S., F.G.S., F.E.S., C.M.Z.S., F.N.Z.Inst., Chief of the Biological Department, Cawthron Institute, Nelson, New Zealand.

Usually there are only three organisms to be considered in the problem, viz., the plant (1), the insect attacking the plant (2), and the parasite or predators of that insect (3). Occasionally we have to consider a fourth, viz., the secondary parasite (4) of the parasite or predator (3). There may even be problems in which a tertiary parasite (5) of this secondary parasite (4) may prove to be of economic importance, in which case we have gone a long way towards proving the old adage,

> " Great fleas have little fleas upon their backs
> to bite 'em.
> And little fleas have lesser fleas, and so *ad infinitum.*"

But what I want you especially to notice from the table is that the classification of any organism as *beneficial* or *injurious* is to be determined purely by its relation to man himself, *i.e.*, whether the part it plays is tending to preserve or to destroy that which he values, or to destroy or preserve that which does him damage. Thus you will see that the very same insect which might be classed as beneficial with respect to one particular problem, might have to be classed as injurious with respect to another. A good illustration of this is the Australian Lady-bird Beetle (Cryptolaemus montrouzieri), which is of the greatest value to fruit-growers in California owing to its vigorous attacks on mealy bug. In its native country, this insect undoubtedly does much also in checking the spread of native species of mealy bug; but it has recently begun to show up in a different light, though fortunately not, so far, very seriously, as an enemy of the introduced Cochineal Insect (Dactylopius tomentosus), which is being so successfully used in the wholesale destruction of that terrible curse, Prickly Pear.

If you again look at the Table from another point of view, you will see that it necessitates the logical division of the problems of Biological Control into two great groups, viz., (1) the control of injurious insects, and (2) the control of injurious weeds. I propose in this lecture to consider these separately, with special reference to the two countries in which I have studied them more particularly, Australia and New Zealand.

(1).—The Control of Injurious Insects.

In considering the possibilities of success of the method of biological control of injurious insects, we have to take into account a number of factors, the most important of which are the climatic conditions and the amount of economic disturbance in the affected area. The most striking successes in control have been made in countries with a warm and equable climate, in which new beneficial insects can be introduced with greater ease and, when introduced flourish and spread more rapidly than in countries in which either a marked change of seasons or a severe winter has to be faced. But this climatic factor, important as it is, must rank only second to another factor which may be termed the amount of disturbance of the affected area. To illustrate this point, let us take the case of an Apple orchard in Australia or New Zealand. Ecologically speaking, one is no more a part of Australia than the other is of New Zealand; both are little pieces of Old England translated to a new environment, with the same plant, the Apple tree, attacked in the same manner by the same pests, codlin moth, woolly aphis and the rest (fortunately by no means all of them are present either in Australia or New Zealand), and the same problems of cultivation, spraying, picking and marketing. The same is true of a dairy farm or a planted forest area of exotic Pines. In all these cases before man came on the scene, the same piece of soil presented an entirely different ecological problem, with only native plants and native animals in the picture. Thus these Apple orchards, these dairy farms and forest plantations are pieces of *disturbed country*, and the amount of disturbance might, perhaps, be mathematically expressed by a formula which would show the percentages of original plants and animals remaining on the area.

Now the crux of the whole problem, of course, is the difference between the ecological interplay of the factors, (1), (2), (3) and (4) in their natural habitat and in the disturbed country. Take, for example, the case of an Apple orchard in New Zealand, attacked, let us say, by the Woolly Aphis (Schizoneura lanigera). The original home of this pest was North America; in many countries it is still called " American Blight." The pest, when studied a few years ago in New Zealand, was found to be almost unbelievably virulent, and was really threatening the continuance of the Apple industry. In America, on the other hand, it has never attained anything like the same degree of severity. The more favourable climate of New Zealand is evidently one of the factors making for increased severity of the pest; but the main cause of it is clearly to be seen as arising from the incomplete balance of Nature in a piece of thoroughly disturbed country. In other words, man, after destroying the original association of plants and animals on the area, had proceeded to introduce (1) the Apple tree, and (2) (unwittingly, of course) the woolly aphis, without balancing this association by (3) the natural enemies of the woolly aphis in the form of parasitic and predatory insect enemies.

Let us now note carefully the effect of the scientific attempt to redress this lack of balance. The task was given to me six years ago, as the most pressing problem of the moment, when I joined the staff of the newly formed Cawthron Institute in Nelson. In the course of a visit to America, undertaken with this as one of its main objects, I found that there were three kinds of insects which attacked woolly aphis successfully enough to make them worthy of consideration. These were (1) Syrphid flies of the genus Pipiza, (2) the Californian Lady-bird Beetle (Hippodamia convergens), and (3) the Chalcidoid wasp (Aphelinus mali). In considering which of these to introduce into New Zealand, I rejected the Syrphid flies because of the abundance of allied native forms in New Zealand and their inability to make headway owing to severe parasitism from Ichnuemonidae.

As regards the other two insects, all the evidence seemed to point in favour of Hippodamia convergens. It had a wonderful record in California and was rightly regarded as one of the most valuable of known beneficial insects. Large sums of money have been spent in rearing, collecting and distributing it, and every Californian fruit grower is fully convinced of the benefits which it confers upon him. Opinions regarding Aphelinus mali on the other hand were not so uniformly favourable. It had already been introduced into South Africa, where it was considered to be a failure.

If I had had to make a choice, the evidence would have been in favour of Hippodamia. However, I was able, through the great kindness of Dr L. O. Howard, Chief of the Bureau of Entomology at Washington, D.C., to obtain good supplies of both these insects. The results were very interesting. Hippodamia convergens was introduced and liberated in thousands throughout the Nelson Province, but has not since been seen or heard of. It is probable that its known habit of seeking the tops of high mountains and hibernating beneath the snow has proved its undoing, for it has failed to establish itself permanently in every country into which it has been introduced. Aphelinus mali, on the other hand, after being kept alive with great difficulty during the first winter in New Zealand (the period corresponding with the summer season in North America which it should normally have experienced), became acclimatised and increased with great rapidity and vigour in the insectaries. In the course of three or four years it was distributed in large numbers to all commercial Apple orchards centres in New Zealand. The result has been that woolly aphis is now under satisfactory control in New Zealand and is no longer regarded as a serious pest. The New Zealand strain of this insect has also been sent over to various parts of Australia and is proving highly beneficial there.

(*To be continued.*)

PUBLIC PARKS AND GARDENS.

CHRYSANTHEMUMS IN VICTORIA PARK, LONDON.

Victoria Park is situated in the parishes of Bethnal Green, Bow and Hackney, and is one of the largest open spaces maintained as a dressed pleasure resort under the control of the London County Council. The chief attraction of this park in autumn is a large display of Chrysanthemums in a house built especially for the purpose. A superintendent, many years ago, conceived the happy idea of providing the public with a show of these beautiful autumn flowers, and to protect the plants from the vagaries of the weather, erected a canvas structure, which in turn was superseded by a fine glass house measuring one hundred feet long by twenty-four feet wide.

To maintain a succession of flowers for as long as possible, a stock of 2,500 plants of early, mid-season and late varieties is grown annually. Up to the time of my visit (November 18) no fewer than 25,000 visitors had made a special journey to inspect the flowers, showing that the efforts of the park authorities are thoroughly appreciated by the public. A broad, serpentine path runs through the house, and in the middle the path is widened to accommodate a big oval bed, this serving admirably to break the view from either end and make the general effect more imposing.

The central oval bed is furnished principally with single varieties, and at the time of my visit the most striking sorts were Sandown Radiance, Acme, pink; Sylvia Slade, Supreme, Jessica, Florrie Stevens, a pretty bronze variety with quilled florets; Mrs. W. Smith, white; Mrs. J. Palmer, Snow Queen—many of the flowers of this Chrysanthemum are almost double; Max, Ethel Ashdown, Metta, Stewart Smith; and the new Clytie, which has clear yellow flowers. The bed is edged with varieties of the Caprice du Printemps type, such as Ami · José Barre, Caprice du Printemps, Kathleen Thomson and Yellow Cap.

The large-flowered varieties are interspersed with a few Cordylines, and whilst the blooms are not of the large size seen at exhibitions, they are of splendid quality. The numerous varieties, old and new, offer plenty of tones for creating a fine colour scheme. Gold Mine was conspicuous as being the richest yellow variety, and others of merit were Nan Luxford, a very beautiful soft pink shade; Ondine, a white, incurved variety; W. Rigby, Mrs. George Monro, junr., one of the finest of the crimsons; the old Fred Green, amaranth; Mrs. Gilbert Drabble, Rayonnante, Buttercup, W. Duckham, Capt. Scott, a fine yellow incurved variety, but not easy to grow to perfection; Pearl Palace, another old incurved variety; which had been blooming for a month; H. W. Thorpe and the pink sport of this variety, Mrs. B. Carpenter, one of the biggest blooms in the collection; Miss D. L. Athron, Mrs. F. J. Fleming, a lovely pink tint; Louisa Pockett, exceedingly good; Frank Ladds, of an uncommon shade of greenish-yellow; Berta, Undaunted, C. Roissard, Mrs. H. Kinsey, one of the best white sorts; F. S. Vallis and Peace, a sport from Louisa Pockett, the late flowers of which are cream, shaded with bronze. A select dozen varieties are Louisa Pockett, Peace, Frank Ladds, Gold Mine, W. Rigby, Berta, Miss D. L. Athron, Ondine, Mrs. B. Carpenter, Mrs. George Monro, junr., Buttercup and H. W. Thorpe.

In addition to the singles and Japanese varieties there are large numbers of decorative sorts. Mrs. R. F. Felton and Jean Pattison make very handsome plants as bushes, and so does the single Phyllis Cooper, of rich yellow colour; Madame Lacroix, white, L'Ile des Plaisirs, Juno, La Chirine, yellow; Ideal, white; and Margot, pink; are other free-flowering, decorative varieties, and some of these are trained on wires up to the roof at the sides and ends of the house. The Superintendent, Mr. F. Hinch, is to be congratulated on his success in maintaining the traditions of this park in providing one of the best displays of Chrysanthemums in the metropolis. *T.*

FRUIT GARDEN.

THE APPLE CROP IN 1926.

THE Apple crop was one of the lightest for a number of years, and various theories have been advanced to account for this. The reports on the hardy fruit crops published in this journal from growers in all parts of the country were very interesting. The chief reasons advanced for the sparse Apple crop were frost and inclement weather during the flowering period. A few reported more favourable weather conditions at the period when the earliest and latest trees bloomed. Some, including two or three well-known fruit growers, suggested that the heavy crop of the previous season was partly responsible for this year's shortage.

I am inclined to think that frost is frequently but wrongly blamed, and would suggest the cause of this year's failure to be due to a natural tendency of the Apple to crop biennially, when, as often is the case, the trees are allowed to mature all the fruits that set. Undoubtedly cold winds and cold, wet weather are not favourable to fruit setting, the conditions not being ideal for the free movement of insects, which are so beneficial in the pollenating of fruit tree blossom.

I do not suggest that frost is not injurious to the blossom, but other factors enter into consideration in this instance, such as atmospheric moisture, the position of the trees and the effect of the early morning sun.

In the same reports many refer to the abundant amount of blossom last spring. Very often when profuse blossoming follows a heavy crop the previous season, the individual flowers are small and weak, and set little or no fruit.

Mr. Jordan, of Ford Manor, Lingfield, in his report, states: "We had no frost to account for the failure, and I think imperfect blossoming had a great share in the present shortage." Another correspondent states: "Recently-planted Apples and Pears are all bearing full crops, and had to be drastically thinned."

I have no doubt that not only did this grower thin his crop this year, but it is his usual practice. Another example is to be found at West Hall, Byfleet, where there is a young orchard of bush Apples about ten years old, containing upwards of 150 varieties. In the same garden there are also many large standard Apples, in many cases duplicate varieties of those in the new orchard. Both the old and the young trees produced heavy crops last year, and it is the custom of Mr. Carpenter to thin the fruits on the bush trees, but the standards are left to carry all the fruit they set. This season there was a good crop again on the bush trees, but very few fruits on the standards. In those few cases where average crops of Apples have been reported, it would be interesting to know if it is the custom of those in charge to practise thinning, or whether in these instances there was a light crop last year.

Last season was the "on" year with Apples generally, but in a large collection there is usually a good percentage of varieties whose "on" year coincides with the "off" year of the majority.

This brings me to the purpose of this note, as to the behaviour of certain varieties of Apples at Wisley which fruited exceptionally well this year and whose flowering period corresponded with the majority of others which blossomed this season but did not set any fruit. Flowering was about three weeks earlier this year than usual; most of the varieties which cropped well flowered about the middle to the end of April, and the weather at that period was not what is considered conducive to fruit-setting. The exceptions include both those which flower early and very late.

The original collection of Apples planted at Wisley about twenty years ago comprises about 200 varieties, two trees of each, growing in one block. The individual varieties which produced a full crop this year are growing in different parts of the plantation, so that the question of shelter does not enter into consideration. What is more interesting is that in a few instances only one tree of certain varieties fruited this season. Upon investigating last year's records it was found that where a particular tree was barren last year, it fruited heavily this season, whereas the one that did not crop this season gave a full crop last year. Three trees of Royal Jubilee are planted in two different positions in the plantation, two in one place, and another about twenty yards away. The two growing together produced a heavy crop of good quality fruits this season, but did not fruit in 1925. The odd one did not carry a fruit this season, but was heavily laden last year.

Each year records are taken during the flowering period, which includes the dates of first flowers opening, when all the blooms are fully expanded, also when the petals have fallen. The crop and the leaf-fall are also recorded. In the list given below will be found the names of the twenty heaviest croppers this season which, with the exception of the variety Arthur Turner, did not produce any fruit last year. The first four named are those of which only one tree fruited.

Belle de Pontoise, Calville Boisbunel, Sure Crop, Winter Majetin, Arthur Turner, Baxter's Pearmain, Cardinal, Christmas Pearmain, Foster's Seedling, Frogmore Prolific, Grantonian, Kerry Pippin, Livermere Favourite, Manks Codlin, Royal Jubilee, Seaton House, Thomas Rivers, Winter Hawthornden, Wagener and Yellow Ingestrie.

As a possible remedy to check this biennial tendency, I would suggest judicious thinning and feeding in those seasons when an overcrop occurs. The above conclusions have been arrived at as a result of several years' observations at Wisley, but the opinions of fruit growers in other parts of the country would be valuable. *J. Wilson, Wisley.*

FRUIT REGISTER.

SELECT MID-SEASON AND LATE DESSERT APPLES.

THERE is a wide choice of dessert Apples, yet it is expedient to plant, according to the requirements of the establishment, a few really good and reliable varieties rather than a large collection, which may include several of little value. It is wise, of course, to study the climatic conditions of the district, and it is very necessary to accord new varieties a trial.

Of Cox's Orange Pippin, I write but little; it is well-known as the finest English dessert Apple, but, unfortunately, it is not always a success on cold soils. Nevertheless, it should be planted in quantity in all gardens, and the maximum of attention bestowed upon it; it is self-sterile and therefore should be planted with other free-flowering varieties, such as Worcester Pearmain or Bramley's Seedling.

Allington Pippin is a valuable Apple, in season from October to December. The tree will commence to bear fruit when in quite a young state, is a vigorous grower and a most reliable cropper, but rather liable to spot disease. The fruits are of medium size, conical in shape, yellow, flushed and striped red.

Adams's Pearmain is an old variety, known so long ago as 1826, and one worthy of more extended planting; it is in season from December to March. The fruits are of medium size, conical in shape, golden-yellow, with red flushing extending over the whole surface. The flesh is crisp and the flavour very good. The tree makes an excellent bush or pyramid.

Christmas Pearmain is an Apple destined to be very popular; its season is December to January. The fruits are small to medium in size, conical, red, overlaid with some russet. The tree is very prolific in cropping and of neat growth. This variety is very suitable for growing in bush or pyramid form. This fine Apple was introduced by Messrs. G. Bunyard and Co. in 1895.

Ribston Pippin requires a warm soil, but it is well worth persevering with, being a very finely-flavoured fruit; it is too well-known to need any description. Its season is November to January.

Claygate Pearmain is a variety of medium size, having a yellow skin overlaid with dull russet. The flesh is very richly flavoured. This very fine Apple makes a good standard tree and is also suitable for growing in bush form. It is one of the very best dessert varieties; it was found at Claygate, in Surrey, in the early years of the nineteenth century. King's Acre Pippin, a January to March Apple, is a very fine variety and should find a place in all gardens; the fruits are of medium size, yellow with just a touch of colour on the sunny side. The tree is a good grower and fertile; the variety was introduced by the Hereford firm in 1899.

Sturmer Pippin is perhaps the best of the very late Apples; it is of great importance that the fruits should be allowed to remain on the tree until the last possible moment, otherwise they will be "leathery," and quite valueless. The fruits are in season from March to June; they are rather small, greenish, with a dull brown cheek, of good flavour when well harvested and thoroughly ripe. It is a self-fertile variety. This Apple originated in Suffolk about the year 1834.

Other excellent varieties are Charles Ross, an October Apple, rather large for dessert; St. Edmund's Russet, a variety of very fine flavour, available from October to November; Margil, not a good grower, but the fruits are of highly aromatic flavour; they are in season from October to February; Heusgen's Golden Reinette, a fine Apple for use in March and April; The Houblon, a good November Apple and a seedling from Cox's Orange Pippin; Egremont Russet, a very pretty variety, and perhaps the best of the russets: and Ellison's Orange, which is ripe from October to November. *Ralph E. Arnold, Kiftsgate Court Gardens, Campden, Gloucestershire.*

VEGETABLE GARDEN.

KITCHEN GARDEN CROPS IN 1926.

THE weather of the past season was unsuited to many crops on heavy land, especially in the spring and early summer. February was very warm and the ground was much warmer at that time than it should have been for that period of the year. Young Cabbages, Kales and Broccoli commenced to grow very rapidly, only to receive a check later, making the season of these vegetables very short. March was very dry and cold, April wet and cold, and all vegetable crops received a severe check to growth. Asparagus was very late in developing and not so tender as when the temperature is higher, although the Asparagus season lasted well through June.

Early Cauliflowers that were planted out in April did not make headway for a long time: growth turned very blue and the crop was quite three weeks late. Potatos planted on warm borders the first week in April did not show through the surface of ground until very late in May, and did not look very vigorous. The main crop varieties, planted a month later, did not come through the ground so quickly as in most seasons and did not make headway for some time. Maincrop Peas were a long while in germinating and the plants made very slow progress for a time, but after they recovered from the check they made very rapid growth, such varieties as Duke of Albany and Quite Content attaining a height of eight feet to nine feet. The pods were very slow in filling at the early stages, but a little later there was an abundance of Peas.

The maincrop plants of Runner Beans came up very slowly, and they did not have a healthy look for some time, with the result that it was later than usual before Beans were available; but when warmer weather came, the crop was very heavy and the plants continued cropping well until frost occurred, which unfortunately was earlier than usual.

All seeds sown in the open, such as Onions, Parsnips, Carrots, Beetroots and Salsify, remained dormant in the ground much longer than in other seasons, and when the seedlings appeared above ground they did not look a good colour or healthy until warmer weather came, when, in a short time, there was a wonderful transformation. All crops grew freely and looked wonderfully well. Onions grew to a useful size and ripened well. Potatos furnished a good, clean crop, very few tubers being deceased. The earliest Brussels Sprouts have not done so well as the later ones. All the Kales and winter Broccoli have grown too vigorously to withstand a hard winter and will be especially liable to damage if severe weather sets in after the heavy rains experienced during the late autumn.

Rosette Colworts have done well, and the hardy Savoys are good. Celery did not grow quite so freely as usual, but the warm autumn helped the crop considerably, and we are now lifting some very fine heads. Seakale has improved very much since August, and we have some very fine crowns for forcing. *E. Neal, Tilgate Gardens, Crawley.*

HOME CORRESPONDENCE.

[*The Editors do not hold themselves responsible for the opinions expressed by correspondents.*]

Jacaranda mimosaefolia.—I should be very grateful to any reader who would give me his or her experience of Jacaranda mimosaefolia as a plant for sheltered positions in the open. I have heard there is a fine specimen growing out-of-doors at Clifton, Bristol, so perhaps a reader in that district will furnish a few details of this plant, because, if my information is correct, it can hardly have been missed. *T. W. Briscoe.*

Planting Bulbs.—Your correspondent, Mr. E. Simper, takes exception to some advice given in my calendar on bulb planting, wherein I recommended marking the sites of the bulbs in a temporary manner before placing the carpeting plants. I should, perhaps, state that I do not regard Wallflowers as carpeting plants, and it was the more lowly subjects, such as Aubrietias, Myosotis, Daisies, etc., I had in mind when writing. I certainly do not recommend, as your correspondent seems to, the planting of bulbs with a dibber, preferring at all times the better way of planting with a trowel, or, if in clumps, with a spade. If the carpeting plants were in position first, then the operator must of necessity tread amongst them, or on them, to get his bulbs in position, doing perhaps irreparable damage. Looked at from this point of view, the time spent in marking the bulb sites, and removing the temporary stakes again would, to my mind, be time well spent. *A. T. Harrison, Culzean Castle Gardens, Ayrshire.*

Virex Glass.—May I ask if the use of the new "Virex" glass has been tried for greenhouse glazing? I understand this glass allows the chemical or actinic rays of light to pass through it much more than the ordinary glass in use. In a recent article in the Press, I note that the Lion House at the Zoological Gardens is now glazed with 8,000 feet of it, and since its use there has not been a single death of an animal in that house. The new Reptile House and also the Monkey House are to be glazed with it, so it seems to have got past the experimental stage and the activity of the monkeys in the new experimental house certainly points to its beneficial use. If these rays are so good for animals, why not for plants? I do not know if the cost is prohibitive for a commercial nursery, but would like to see some authoritative body, Kew or the R.H.S., take the lead in testing it out for the benefit of all plant growers. Figures as to its cost, liability to breakage, etc., could be obtained in the usual trade way; but if its use proves as beneficial as it may possibly be for winter-flowering plants, especially in the environs of large towns where growers experience the difficulties due at this season of the year to the want of light for growing choice plants, propagating houses, etc., it might be a paying proposition to reglaze with Virex glass and thus secure healthy young plants in the dull days of early spring. *G. L.*

SOCIETIES.

LANCASTER CHRYSANTHEMUM.

November 10.—The third post-war Lancaster Chrysanthemum show, held on the above date, in Ashton Hall, was the best of the three, both in point of numbers and quality, there being an increase of sixty in the number of exhibits.

The President, Chief Constable Mr. C. E. Harriss, presided at the opening, which was performed by the Mayor, Alderman I. J. Curwen, who was supported by the ex-Mayor, Councillor R. Roberts, all of whom are keen supporters of horticultural exhibitions. The children of the schools visited the show in the afternoon, and there was a good attendance of the public.

The Lancaster Corporation (gr. Mr. J. Dearden) staged a massive group of plants in front of the organ; and Sir N. W. Helme's group, which won the Challenge Cup, was at the same end of the hall. Dr. E. S. Jackson had a very attractive and choice collection of Orchids and foliage plants not for competition. Sir Norval Helme won the Cup outright, but he generously returned it to the Committee. This Cup was presented to the pre-war Society by Lord Ashton.

The open classes attracted some magnificent cut blooms, and the Lady Storey Silver Rose Bowl was won with twelve splendid blooms by Mr. F. Smith, Bare, of which the varieties Victory, Mrs. A. Davis, W. Rigby, Mrs. B. Carpenter, Princess Mary, Thos. A. Pockett, Mrs. M. Sargent, Majestic, Dawn of Day and Mrs. Gilbert Drabble were of exceptional quality; while in the class for six blooms the same exhibitor won with splendid blooms of A. F. Tofield, Miss D. L. Athron and Mrs. R. C. Pulling, and he also excelled in the classes for singles, having Miranda and Phyllis Cooper, in extra good form. Messrs. Boardley and Carney were good runners-up.

In the class for a table decoration Mrs. Musgrave Hoyle maintained the premier position she has secured at the summer shows, and she also showed the best bouquet.

Sir N. W. Helme was chief winner in the plant classes, although he had to take second place to Mr. J. Dearden for singles.

The exhibits of fruits and vegetables in the open classes resulted in keen competition between Messrs. W. Orr, W. Robinson, T. Huntington, C. Fox and Dr. Jackson, each of whom won first prizes.

In the non-professional classes, Mr. E. Boardley narrowly won the Snelson and Waters Cup, and he also took several other first prizes, having especially good blooms of Mrs. C. B. Minchin and Margaret Davis, and Single Miranda. Other prize-winners were Messrs. S. Carney, R. Lewtas, T. Clayton and I. Winder; and Mr. S. Carney secured the Councillor Clark Cup, open to non-professional and allotment-holders for three plants.

The allotment-holders' classes were keenly contested, and some good exhibits were forthcoming. The vegetables and fruits were splendid, and Miss Brighouse again secured the Mayor's Cup for most points in these classes.

BARROW.

November 6.—The sixth annual show of the Barrow Chrysanthemum Society was held in the old Town Hall. The Mayor, Alderman Ellison, presided over the opening ceremony, which was performed by the Mayoress. The quality and number of the exhibits were an improvement over last year, and there was an increased attendance. Commander C. Bissett, R.N., promised to provide another Cup for the Amateur Section, which was an outstanding feature, in which Mr. E. Oxley excelled.

In the open section, Mr. J. Muddiman had nine entries and secured eight first prizes and one second prize, and he also had the best bloom in Victory. The President, Capt. Fisher, won the first prize for six plants of Primula obconica. The best table decoration was arranged by Mr. F. H. Bewsher, and the best bowl of flowers by Mrs. J. H. Parnham. Mr. W. H. Christian, who has been a consistent supporter of the show was very successful in the Chrysanthemum classes and was the chief prize winner in the open fruit classes. The competition in the open classes for vegetables were keen.

In the amateur section, Mr. E. Oxley won the Challenge Cup, a Gold Medal, the first prize for twelve Japanese Chrysanthemums, and also several other first prizes. He showed the best bloom in Mrs. B. Carpenter. Mr. H. Herdman and Mr. A. Nicholls also won first prizes, and the above-named and Mr. T. Holmes were most successful in the plant classes.

In the novice classes, Mr. H. Wright won the first prize and a Gold Medal for five Japanese Chrysanthemums. Mr. T. Helme also won several first prizes in this section.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

Friday, November 12.—*Committee Present*: J. B. Adamson, Esq. (in the chair), Messrs. R. Ashworth, H. Astley Bell, C. Branch, A. Burns, D. A. Cowan, J. Evans, Capt. W. Horridge, D. McLeod, E. W. Thompson and H. Arthur, (Secretary).

First Class Certificates.

Odontoglossum crispum var. Paledon.—A large, well-formed flower with white sepals and petals, the former having chocolate-coloured spots.

O. crispum var. Toy.—A full, round, white flower with broad, fimbriated petals; the sepals and lip are blotched reddish-brown. From S. Gratrix, Esq.

Cypripedium Bromilowianum (Selene × *Christopher).*—A large yellow flower; the dorsal sepal, which measures three-and-half inches across, has a broad, white margin; the broad petals have faint brown lines; the lip is yellowish-brown. From H. J. Bromilow, Esq.

Awards of Merit.

Cattleya Dinah (Dupreana × *Elvina).*—From Mrs. Gratrix.

Cypripedium aurea (Selene × *concolor).*—From H. J. Bromilow, Esq.

Odontoglossum Eximillus var. Rex.—From Mrs. P. Smith.

Cypripedium Marjorie Eaglesfield (Earl Tankerville × *Dixon Thorpe); Brasso-Cattleya Rosita, Llewellyn's variety.* — From G. V. Llewellyn, Esq.

Groups.

Mrs. Bruce and Miss Wrigley, Bury (gr. Mr. A. Burns), staged a magnificent group of Cypripediums to which a Gold Medal was awarded. A Gold Medal was also awarded to a noteworthy group staged by S. Gratrix, Esq.

CROYDON CHRYSANTHEMUM.

The thirty-fourth exhibition of the Croydon Chrysanthemum Society was held at the Central Baths Hall, Croydon, on Tuesday and Wednesday, November 9 and 10, and was considered to be one of the finest held since the war, and even regarded by some folk as equal to many pre-war exhibitions. There were twenty-two open classes, and in these there were exhibitors from a very wide stretch of country, while, in addition, there were forty other classes open to residents within a five miles radius of Croydon.

The principal class was for eighteen Japanese blooms, and here the Challenge Cup and Medal were won by B. C. Deyonge, Esq. (gr. Mr. A. Porter), Stoke Lodge, Cobham, who had blooms which were quite equal to those shown at the National Society's show. The second prize was awarded to A. M. McColl, Esq. (gr. Mr. W. Howarth), Bickley; third, A. F. Blades, Esq. (gr. Mr. F. Cordell), Reigate. The premier Japanese bloom was a specimen of Mrs. Algernon Davis, shown by Mr. Blades, while the premier incurved flower was an example of Douglas Wells, shown by G. H. Fisher, Esq., Purley.

The class for six vases of decorative Chrysanthemums, six flowers in a vase, attracted ten competitors, and the total display of three-hundred-and-sixty flowers was a particularly good one. The first prize was won by J. F. Junkin, Esq. (gr. Mr. W. Dennis), Ravenswold, South Croydon; second, Mr. J. Symonds, Croydon, an amateur grower, and third, W. H. McAlpine, Esq. (gr. Mr. F. C. Willie), Nutfield. For six vases of disbudded single varieties, six flowers in each vase, the competition brought nine entries, with a total display of 324 blooms; G. H. Fisher, Esq., won the premier award; Mr. W. G. Maisey, another Croydon amateur grower, was placed second, and J. F. Junkin, Esq., third. In the local division, the President's Cup and first prize were won by G. W. Bird, Esq. (gr. Mr. H. W. Redden), West Wickham; second, J. F. Junkin, Esq.; and third, F. Warren, Esq. (gr. Mr. Fane), Beckenham. The best of five groups of Chrysanthemums, each staged on a space nine feet by six feet, was arranged by T. B. Laurence Esq. (gr. Mr. Randle), Earlswood, who was followed in order by Sir Herbert Brown (gr. Mr. A. Rogers), Croydon, and C. W. Evans, Esq. (gr. Mr. E. Willis), Batts Hill, Redhill.

The Croydon Tradesmen provided a Silver Cup to be added to the first prize for four vases of Carnations, and these awards were won by S. G. Hose, Esq. (gr. Mr. J. Humphrey), Bletchingly; Sir A. Tritton (gr. Mr. J. King), Reigate, second, and E. Sinclair, Esq. (gr. Mr. F. A. Bush), third.

There were five competitors in each of the two classes for table decorations, Mrs. Atkins and Mrs. Willie winning the principal awards.

The Epps Challenge Cup offered in the amateur division for the best nine Japanese Chrysanthemum blooms was won by Mr. J. Symonds, who was followed in order by Mr. H. E. Marden and Mr. W. Gaden. Mr. Maisey, Mr. W. Gaden, Mr. Marden and Mr. S. B. Chase were successful prize winners in other classes in this division.

The Cheer Bowl, for a collection of Apples, was, on this occasion, won outright by Mr. F. J. Long, Belmont, the other prize winners in this class being G. Shrubsall, Esq. (gr. Mr. G. Barnes), and Mr. J. Nightingale, Wallington.

In the open class for collections of vegetables, Lord Riddell (gr. Mr. W. A. Payne), Tadworth, Walton-on-the-Hill, was the most successful competitor, with an exceptionally fine lot of produce thoroughly well staged. B. E. Strong, Esq. (gr. Mr. E. A. Ashfield), Limpsfield Grange, and Earl Beatty (gr. Mr. A. Barrett), Reigate Priory, followed in the order given. Mr. J. L. Wild was another very successful exhibitor in the vegetable classes.

Non-competitive exhibits included a very pleasing display of Chrysanthemums by Messrs. Keith Luxford and Co., and one of the Potatos and bulbs by Messrs. E. W. and S. Rogers, while A. O'Hanlon, Esq. (gr. Mr. E. Carpenter), Limpsfield, set up a particularly fine collection of fruit to which the Silver Bunyard Medal was awarded. Mr. T. Butcher tastefully decorated the stage with Chrysanthemums, Palms and Ferns, while a particularly interesting part of the exhibition was a contribution of no fewer than 1,000 paintings of flowers by the scholars of the various schools in the Croydon district.

ROYAL CALEDONIAN HORTICULTURAL.

The ordinary monthly meeting of the Royal Caledonian Horticultural Society was held at 5, St. Andrew's Square, Edinburgh, on November 2, Mr. T. J. Gray, Vice-president, in the chair. Dr. Inglis Clark, Edinburgh, gave a lecture entitled, "The Evolution of a Garden," which was illustrated by a large number of very beautiful coloured slides of natural and artificial gardens in many parts of Europe, Asia and Africa, besides those of his own garden at Oakwood, Midlothian, which eight years ago was a wilderness with a ravine choked with rank weeds and other vegetation, but which has now a fine rock and water garden. There were no exhibits.

ROYAL HORTICULTURAL.

November 30.—The special feature of the fortnightly meeting of the R.H.S., at Vincent Square, Westminster, on this date, was intended to be a show of seasonable Cypripediums, but, while Orchids generally were freely staged, the desired genus was not represented so largely as would have been the case in normal times. Owing to the coal shortage the growers of Orchids have been compelled to maintain their houses at a much lower temperature than is customary, so that their Cypripediums are not yet in flower. Chrysanthemums, Carnations, winter-flowering Begonias and young Conifers were the chief subjects before the Floral Committee. Seasonable Apples and a collection of coloured Kales were also exhibited, and various paintings, with a few sundries, helped to fill the hall.

Orchid Committee.

Present: Sir Jeremiah Colman, Bt. (in the chair), Mr. Gurney Wilson (Hon. Sec.), Mr. R. Brooman White, Mr. Fred J. Hanbury, Mr. S. W. Flory, Mr. A. Dye, Mr. Charles H. Curtis, Mr. Fred K. Sander, Mr. J. E. Shill, Mr. Henry H. Smith, Mr. John C. Cowan, Mr. A. McBean, Mr. T. Armstrong, Mr. Richard G. Thwaites, Mr. J. Wilson Potter, Mr. Stuart H. Low, and Mr. Ernest R. Ashton.

Awards of Merit.

Cypripedium Nesta, Westonbirt var.—A handsome, erect, bold form of the hybrid between C. Lucifer and C. Earl Tankerville. The white, rounded dorsal sepal is lined with purple spots and is green at the base. The petals are brown and green, as also is the lip. Shown by Messrs. H. G. Alexander, Ltd.

Brasso-Laelio-Cattleya Mithra (B.-C. Safrano × B.-L.-C. Amber).—This was represented by a small but shapely flower of rich, deep yellow colouring; the flattish lip is waved, and the gold colour shades into pink at the margins. Shown by Baron Bruno Schroder (gr. Mr. J. E. Shill), Dell Park, Egham.

Brasso-Laelio-Cattleya Cytheria (B.-C. Leemannae × B.-L.-C. The Baroness).—A very pretty hybrid with soft lemon-yellow sepals and petals, the latter broad and waved at the margins. The lip has deeper yellow colouring near the brown-marked throat, but pales again towards the apex; the waved margin has a narrow edging of mauve. Shown by Messrs. J. and A. McBean.

Groups.

The first of the exhibits from the new firm of Messrs. H. G. Alexander, Ltd., was notable for its fine lot of splendidly-grown Cypripediums, together with capital specimens of Vanda coerulea, Oncidium varicosum Rogersii, Cattleya Mercutio and Laelio-Cattleya Golden Beauty, this last carrying fifteen of its orange-gold flowers. Among the Cypripediums we were especially attracted by C. Minotaur, represented by several specimens; C. Holdeni, Westonbirt var., C. Viking, C. Golden Fleece, Westonbirt var., a very beautiful soft yellow and white hybrid; C. Nydia and C. Lucifer, both F.C.C. varieties; C. Lord Wolmer and C. Garibaldi with six flowers. The group was admirably arranged with a setting of green moss.

In the very bright exhibit from Messrs. Charlesworth and Co., Odontoglossum Edwardii, O. Colomba, O. Fabia, O. eximium xanthotes and O. Wilckeanum aureum made a delightful display with their long, arching spikes. In the foreground we noticed Miltonia Venus, M. Wm. Pitt, the deep-hued Odontioda Lerna, Brasso-Cattleya British Queen, Odontonia Joiceyana, Cypripedium Cupid and the brilliant Brasso-Laelio-Cattleya Alfred Dean.

An interesting group was arranged by H. T. Pitt, Esq. (gr. Mr. Thurgood), Rosslyn, Stamford Hill, who showed Cypripediums extensively, with Odontoglossum Zulu, brown and yellow. The principal Cypripediums were C. Chapmanii, C. Stamperland, Pitt's var., C. Sanacderae, C. triumphans, C. Phantasy, a fine plant of C. insigne Sanderae, C. Chrysostom var. Grace Darling, the old C. Spicerianum, and C. Mary Gratrix. A flowering plant of Acampe papillosa was included.

In Messrs. Sander's exhibit there were capital examples of Cymbidium Tracyanum, C. T. albanense and C. T. pictum, the last a very beautiful form; C. Fairy was also well represented. Oncidium tigrinum and various Odontoglossums lent grace and colour to the group which also included Masdevallia Imogen, the fragrant Maxillaria picta, Dendrobium Victoria Regina, Cymbidium Dayanum, Oncidium bi-callosum and an array of Cypripediums.

Cattleyas and Laelio-Cattleyas were the chief feature of Messrs. Black and Flory's group, and these made a brave show of colour. Leading subjects were C. Fabia, C. Loma, C. Wembley. L.-C. Edzell, the new fawn pink L.-C. armeniaca (L.-C. Thyone × C. Lord Rothschild), L.-C. Roderick, L.-C. Senator, and the soft mauve Brasso-Cattleya Alderman. Cypripedium Maisie and C. Fantasia were other prominent Orchids in this display.

Messrs. Cowan and Co. had a fine display of Cypripediums, their handsome group containing grand flowers of C. Pixie, C. Phillida, C. Warrior var. H. Green, C. Aeson giganteum, C. Swallow, C. bourtonense, C. Thalia var. Mrs. F. Wellesley, C. Lucifer and the bold C. Yadie (Hera × Draco). The central plant of Laelio-Cattleya Mowyth var. magnifica carried four big blooms.

Mr. Harry Dixon showed Cypripedium Sanacderae, C. Eurybiades and other good things. Messrs. Sutton Brothers submitted Odontioda Grisel Lady Polworth, Brasso-Cattleya Nestor and a few Cypripediums. Brasso-Laelio-Cattleya Cytheria, of soft yellow colouring, was the feature of a small exhibit from Messrs. J. and A. McBean. Brasso-Laelio-Cattleya Elysian, var. Aureate, of lovely yellow colouring, was shown by Messrs. Armstrong and Brown, together with large flowers of Cypripedium Chrysostom var. Richard Fort and C. Crusader.

Messrs. A. J. Keeling and Sons showed a few very good Cypripediums, these including C. Nirvana in fine form, C. Merope, C. Strelsa var. Richard Ashworth, C. Queen Elizabeth, very bold in green and brown, and the interesting C. Ballet Girl with white ventral sepals.

Floral Committee.

Present: Section A.—Mr. H. B. May (in the chair), Mr. F. J. McLeod, Mr. Arthur Turner, Lady Beatrix Stanley, Mrs. Ethel Wightman, Mr. G. W. Leach, Mr. H. J. Jones, Mr. Wm. Howe, Mr. J. M. Bridgeford, Mr. W. H. Page, Mr. E. R. Janes, Mr. Montagu Allwood, Mr. A. E. Vasey, Mr. Chas. E. Pearson, Mr. J. T. West, Mr. W. B. Gingell, Mr. James B. Riding, Mr. D. B. Crane, Mrs. Helen Lindsay Smith and Mr. W. P. Thomson.

Section B.—Mr. G. W. E. Loder (in the chair), Mr. G. Reuthe, Mr. F. G. Preston, Mr. J. R. Russell, Mr. Charles T. Musgrave, Mr. R. D. Trotter, Mr. T. Hay, Mr. Reginald Cory, Mr. C. Williams, Mr. R. C. Notcutt, Mr. W. B. Cranfield, Mr. E. H. Wilding and Mr. G. Yeld.

Awards of Merit.

Carnation Royalty.—A well-formed Fancy Carnation of, apparently, free habit. The flowers, which are borne on long, stout stems, are of scarlet colour, lightly striped with dark slate grey.

C. The Favourite.—A good pink perpetual-flowering variety. The shapely flowers have serrated margins and are carried on long, stout stems. Both varieties were shown by Mr. W. E. Wallace.

Chrysanthemum Aloma.—This is an exceptionally large Incurved variety of considerable decorative value. The rounded flowers have broad petals of shining straw-yellow colour.

C. Clarice.—A shapely Single of rather more than medium size. There are usually three rows of pointed ray florets of bright cardinal red colour with a distinct pale golden zone.

C. Valerice.—A very beautiful Single of the Mensa type and size. The substantial ray florets are of a reddish terra-cotta colour, with a fascinating sheen of rose doré. These three varieties were shown by Messrs. Keith Luxford and Co.

C. Golden Climax.—A perfectly shaped little Pompon of very free habit and medium yellow shade of colour. Shown by Mr. H. J. Jones.

C. Guardsman.—A handsome Single of large size, excellent form and bright crimson colour. Shown by Mr. H. Shoesmith, junr.

C. Ruddigore.—A Japanese variety of the size and shape valued for high-class market purposes. The graceful, rolled florets are of a glowing chestnut colour. Shown by Messrs. Cragg, Harrison and Cragg.

Ruscus aculeatus.—The award to this native evergreen was given in recognition of its value as a brightly-berried shrub. The erect branches on view bore an unusual number of large berries. Shown by Mr. Gerald Loder, Wakehurst Place.

Groups.

Chrysanthemums of great decorative value were extensively shown by many growers. Messrs. Keith Luxford and Co. had a large collection of exhibition Japanese, Decorative and Single varieties. The large Japanese included Andania, chestnut colour with yellow tips to the florets; Jas. Seymour, bright yellow; Thomas W. Pockett, silvery-pink; and Autumn Tints. The chief Singles were Sandown Brilliance, of rich crimson colour; Phyllis Cooper, yellow; J. Barnell, deep cardinal; Challenger, crimson; and Yellow Mary Morris.

In a smaller collection, well set up in the corner of the Tea Annexe, by Mr. A. G. Vinter, there were good vases of Clio, December Bronze and Mrs. E. Dove, of the market type of Japanese blooms, and a number of useful Singles. Messrs. Barham and Wood had a neat collection of Chrysanthemums under the clock, and on the tabling Messrs. Scott and Wickham displayed the variety Enton Beauty, of velvety crimson colour.

Many varieties of great decorative value were tastefully displayed by Messrs. Cragg, Harrison and Cragg. The chief were A. Brooker, a showy, loosely made Incurved, which has a large market sale; P. Dove, a shapely, white Incurved; Lynette, a good white Japanese; and Exmouth, crimson. Messrs. Hewitts, Ltd., gave special prominence to their new variety Rose Marie, a deep pink Single with a definite white zone, and also included vases of Susan and Robert Collins. Mr. H. Hemsley associated several large vases of Chrysanthemums with hardy shrubs and alpines in pots.

A very attractive display was made by Messrs. Silvesters, Ltd., with baskets of Primula obconica varieties, Cyclamens, Ericas and Palms, as grown for market sale, edged with compact plants of Selaginella Kraussiana aurea. Messrs. Allwood Bros. and Mr. C. Engelmann had their customary exhibits of well-grown Carnations, and Mr. J. J. Kettle staged particularly good bunches of Princess of Wales Violets.

Messrs. John Peed and Son again set up an attractive display of the winter-flowering Begonias they grow so well. The large batches of the varieties Exquisite and Emita of the large-flowered varieties, and Mrs. Patersen, the bronzy-leaved sort, were admirable.

A considerable collection of shapely young Conifers, shown by Mr. G. G. Whitelegg, was well arranged on a floor space. This included many species and varieties of Abies, Picea, Cupressus and Juniperus of value for general planting and for the rock garden. The Orpington Nurseries Co. had a representative collection of dwarf Conifers suitable for the rock garden. Those with golden colouring included Retinospora tetragona aurea and R. pisifera filifera aurea. Topiary specimens were shown by Mr. J. Klinkert. Miss Gladys Howse had miniature rock gardens.

The garden sundries exhibits included a collection of knives, secateurs and other cutting implements, shown by Mr. Jardine; an ornamental selection of garden statuary by Messrs. Pulham and Son, and examples of the useful Chase Continuous Cloche.

The most interesting of the exhibits of paintings was the extensive collection of studies of South African plants by Mrs. Alistair Gilroy. This included excellent representations of a wide range of trees, shrubs, Orchids, Bromeliads, Water Lilies and bulbous plants.

Fruit and Vegetable Committee.

Present: Messrs. C. G. A. Nix, J. Cheal, W. Poupart, Geo. F. Tinley, J. Wilson, E. Harriss, A. Poupart, E. Neal, Fred Treseder, A. Bullock, W. H. Divers, E. A. Bunyard, E. A. Beckett and A. N. Rawes.

A dish of Apple Arthur Turner was exhibited by Mr. C. Turner, Slough. This fine November Apple is one of the most beautiful varieties from the blossom point of view.

Mr. H. Hemsley, Crawley, showed a collection of Apples, Pears and Medlars. The group was made attractive with a few choice foliage plants, and included good specimens of Apples Cox's Orange Pippin, Royal Jubilee, Baxter's Pearmain, Claygate Pearmain, Sussex Forge, Adams's Pearmain and Annie Elizabeth; and of Pears Santa Claus, Verulam, Olivier de Serres and Doyenné du Comice.

Messrs. Barr and Sons, King Street, Covent Garden, showed a collection of coloured Kales, the variegation in the foliage being very diverse.

AWARDS TO POTATOS.

The following awards have been made to the undermentioned maincrop varieties of Potatos by the Royal Horticultural Society, after trial at Wisley.

Awards of Merit.

Up-to-Date, sent by Garden Supplies; *Irish King,* sent by Messrs. Barr and Sons; and *Field Marshall,* sent by Messrs. Dobbie and Co. and Mr. W. G. Holmes.

Highly Commended.

Sefton Wonder, sent by Garden Supplies; and Arran Chief, sent by Messrs. Dobbie and Co., and Garden Supplies.

Commended.

Majestic, sent by Messrs. Dobbie and Co., Messrs. J. Carter and Co., Mr. W. H. Simpson, Mr. W. G. Holmes and Messrs. D. and W. Croll; King Edward, sent by Messrs. Barr and Sons, Mr. W. G. Holmes and Messrs. Dobbie and Co.; King George V, sent by Messrs. Barr and Sons; Kerr's Pink, sent by Messrs. Dobbie and Co, Messrs. D. and W. Croll, and Mr. W. H. Simpson; Victory (Simpson's), sent by Mr. D. Keir.

NATIONAL CHRYSANTHEMUM.

At the meeting of the National Chrysanthemum Society, held at the Royal Horticultural Hall, on November 29, sixteen novelties were submitted, and the following awards made.

First Class Certificates.

Guardsman. (*V.II.a.*)—A handsome, bright, crimson, single variety, of flattish form and excellent quality. Shown by Mr. H. Shoesmith, junr.

Aloma. (*I.a.*)—A huge incurved variety, very compact and of straw-yellow colour. One of the very largest incurved varieties we have seen. Shown by Messrs. K. Luxford and Co.

Crimson Dawn. (*V.II.a.*)—A large ruby-crimson, single variety, with a very narrow yellow zone round the disc. The crimson colouring is particularly brilliant. Shown by Mr. H. J. Jones.

Ruddigore. (*II.I.b.*)—A decorative variety that should prove very useful for market purposes. It is of reflexing Japanese style, of a deep glowing Chestnut colour. The blooms are made up of narrow, graceful florets and carried on stiff stems. Shown by Messrs. Cragg, Harrison and Cragg.

Commendations.

Mrs. W. Turnham. (*V.II.a.*)—A shapely single variety of crimson self colour. The flowers are of excellent form, but carry rather a large number of florets for a single variety. Shown by Viscount Hambleden (gr. Mr. W. Turnham), Greenlands, Henley-on-Thames.

Valerice. (*V.II.a.*)—A very effective reddish terra-cotta single variety with broad florets and a very narrow yellow zone round the disc. Shown by Messrs. K. Luxford and Co.

READING AND DISTRICT GARDENERS'.

The usual fortnightly meeting was held in the Abbey Hall on Monday, November 22, when there was an excellent attendance, presided over by the President, Mr. Frank E. Moring.

The subject for the evening was "Fungoid Diseases," and the lecturer, Mr. W. Budden, M.A., Department of Economic Mycology, Reading University, who gave a most interesting and instructive discourse on this very important subject, especially as this season many diseases have been prevalent. Such diseases as blight and wart in Potatos, finger-and-toe and club root in Cruciferous crops, downy mildew in Onions, Celery rust, damping off, black mould, striping and blotching in Tomatos, Apple and Pear scab, silver leaf, etc., were fully explained, and remedial and preventive measures suggested.

A lengthy and animated discussion followed, in which Messrs. Dore, Cook, Wynn, Reed, Martin, Cox, Priest, Burrows, Iles, Waite and others took part, at the conclusion of which a hearty vote of thanks was tendered to Mr. Budden.

In the competition for three winter-flowering Begonias, the first prize was awarded to Mr. J. Wynn, The Gardens, Hammonds, Checkendon, for three beautiful plants of the variety Optima; and the second, to Mr. A. H. Dow, The Gardens, Calcot Park, for a well-flowered Gloire de Lorraine.

In the non-competitive section Awards of Merit were granted to exhibits of Chrysanthemum blooms from Mr. E. Cooper, Conisborough Avenue, Caversham; Mr. C. J. Howlett, The Yews, Earley; Mr. G. Tovey, The Gardens, The Red House, Earley; Mr. A. Terry, Hawthorn Cottage, Earley; and Mr. R. G. Taylor, Highgrove Street, Reading.

NATIONAL DAHLIA.

The annual meeting of the National Dahlia Society was held on Tuesday last in the Lecture Room of the Royal Horticultural Hall, Vincent Square, Westminster. The Chairman of Committee, Mr. J. Cheal, presided, and there were present Messrs. D. B. Crane (Treasurer), W. J. Chittenden (Secretary), J. G. West, J. Fraser, J. Emberson, R. H. Holton, A. Turner, Geo. Churcher, A. E. Amos, H. Stredwick, A. D. Fort, F. W. Alesworth, H. May, W. Treseder, H. Bristow, H. Prentice, A. J. Cobb, G. F. Tinley, J. B. Riding, G. F. Drayson, T. Hay, W. H. Johns and Mrs. Courtney Page.

In opening the proceedings, the Chairman referred to the great loss the Society had sustained in the death of Mr. Vincent, President of the American Dahlia Society, and Mr. H Woolman; he stated that he was present at the funeral of the latter gentleman and sent a wreath on behalf of the Society.

The annual report of the Committee was read by the Hon. Secretary, and the financial statement submitted by the Hon. Treasurer. The report stated that the Society had had one of the most successful years in its history, and the Treasurer stated that the Society's assets amounted to £118 9s. 7d.

The Report and Balance Sheet were adopted, the only comment being made by the Chairman, who stated that the Society was indebted very greatly to the Secretary for the happy position which it enjoyed. The Treasurer proposed that an honorarium of twenty guineas be given to Mr. Chittenden, and this was carried with the unanimous vote of those present, amidst applause. Mr. Chittenden returned thanks for the honorarium, and stated that he greatly appreciated the kind words which had been said of him; he had received most valued support from Mr. Cheal. He enjoyed the work and he hoped to be able to continue in the office.

The next business was the consideration of the Report of the Sub-Committee on the alterations of the Society's By-laws. The chief alterations were in By-law No. 2, in which the word "Trials" was added to the objects of the Society, and in By-law 4, which was altered to extend the number of Committee members to thirty-six; in By-law No. 6, the words "or Regulation" were deleted, and By-law No. 10 was amended to allow only three medals instead of four to the affiliated societies for award at one exhibition.

The meeting next proceeded to the election of officers. Mr. R. Cory was elected President, and the Vice-Presidents were reappointed, with the addition of Mr. J. Emberson, Mr. T. Hay, Mr. R. Findlay, Mr. H. L. Bruce and Mr. D. B. Crane. Mr. J. Cheal was re-elected Chairman, Mr. Emberson, Hon. Show Superintendent, Mr. W. J. Chittenden, Hon. Secretary, and Mr. W. E. Chittenden, Hon. Assistant Secretary. Mr. Crane, in proposing the election of Mr. W. J. Chittenden as Hon. Secretary, referred to the very valued work he had done for the Society, and stated that it is largely due to his efforts that he, as Treasurer, was able to announce such a handsome balance. Mr. D. B. Crane was re-elected Hon. Treasurer and thanked for his services. The members of the Committee were reappointed *en bloc*, and the following names added: Mr. D. Campbell, Mr. W. H. Johns, Mr. J. Woolman, Mr. H. Stredwick, Mr. Drayson, Mr. W. Cuthbertson and Major Churcher.

A vote of thanks to the Chairman, proposed by Mr. G. F. Tinley, concluded the proceedings.

GUILDFORD GARDENERS'.

Chrysanthemums formed the subject of a lecture given by Mr. J. A. Kirkwood, gardener to the Duke of Sutherland, Sutton Place, to the members of the above Association, on November 8.

A surprisingly good audience on a very wet night testified to the popularity of speaker and subject.

Members are now bringing flowers to the meetings and there is a friendly competition; quite appropriately the flowers on this occasion were Chrysanthemums, large Japanese blooms, worthy of any exhibition, decoratives and singles as well as pot plants, and after the meeting most of them were sold in aid of the lecture fund.

Mr. Kirkwood claimed for the Chrysanthemum that it was "the most valuable of all our garden plants," as it comes into bloom when most other subjects have been cut down by frost. It brightens our homes in dull days of winter when other subjects have ceased to bloom, and, moreover, it produces an enormous quantity of flowers at little expense. With a careful selection of varieties they may be had in bloom from early September until February. A great point in favour of the early-flowering varieties was their ease of culture and the profuse display they make. Mr. Kirkwood went fully into the details of propagation and cultural treatment, making his hints especially helpful to amateurs. For more advanced gardeners, and for those having suitable accommodation, the production of large blooms for exhibition came in for consideration, as did Chrysanthemums grown for decorative purposes.

A very good discussion followed in which Mr. Cook, of Stoke Hill, a champion grower and prize winner, took a leading part. On the proposition of the President, Mr. W. T. Patrick, J.P., Mr. Kirkwood was heartily thanked for his lecture.

Mrs. Hammond, of West Horsley, suggested a members' social gathering to be held in January with a view to fostering a friendly and social feeling amongst the membership. Another suggestion was a collection to augment the fund raised year by year by Mr. Auton for the Gardeners' Royal Benevolent Institution. Both suggestions were well received and will be acted upon.

The next lecture will be on Monday, December 13, when Mr. E. R. Janes, Reading, will lecture on Sweet Peas.

Obituary.

William Rutherford Stokoe.—Mr. W. R. Stokoe, who passed away on November 25, in his seventy-fourth year, was gardener at 21, Addison Road, Kensington, for upwards of thirty-five years. He was a native of Leicestershire, where his father was gardener to Lord Berners, at Keythorpe Hall, and under him he first gained experience in the garden, subsequently serving in such famous gardens as those of Castle Ashby, Knowsley Hall, Chatsworth, Sion House, Easton Park, Suffolk, and South Villa, Regents Park; he was also engaged for some time at Lee's Nursery, Hammersmith. Although the late Mr. Stokoe was not known as an exhibitor, he was known in Kensington as a keen and painstaking gardener, a good grower of Grapes and Chrysanthemums, while his bedding displays were greatly admired by all. He retired in 1922, but did not enjoy his retirement long, for in 1925 he had a stroke from which he never recovered. He leaves a widow and three children.

F. H. Page.—It is with great regret we record the death of Mr. F. H. Page, at the age of sixty-six, who was gardener to H. H. Howard-Vyse, Esq., Stoke Place, Slough, for the past thirty-five years. He had not been well for some months, and last July had a nervous breakdown, from which he never recovered. He was a highly skilled gardener and many young men he trained are now holding good positions. Mr. Page was a keen worker for the local horticultural society. He was a born gardener and he was never happier than when at work in the garden he loved. The funeral took place on November 13, at Stoke Poges Church, where many of his friends met to pay their last tribute of respect. He leaves a widow and three daughters.

George Harvey.—We regret to report the sudden death of Mr. George Harvey which took place on November 6. Mr. Harvey was sixty-nine years of age, and was for fifty years gardener to Mrs. McCreagh Thornhill, at Stanton-in-Peak Hall, Derbyshire. He was a particularly successful cultivator of Seville Oranges and Lemons, and gained several medals for exhibits of these fruits which he staged at the meetings of the Royal Horticultural Society. An Orange tree fruiting in a vinery at Stanton-in-Peak Hall was illustrated in *The Gardeners' Chronicle* of February 7, 1914. Mr. Harvey was also a clever grower and exhibitor of Chrysanthemums and stove and greenhouse plants, and won, among other awards, Cups at exhibitions of the National Chrysanthemum Society. He was also a regular subscriber to and life member of the Royal Gardeners' Orphan Fund.

ANSWERS TO CORRESPONDENTS.

Mealy Bug on Vines.—*F. P.* The reply you refer to was published in *Gard. Chron.*, October 7, 1911, and is as follows: "As soon as the vines have shed their foliage, prune the lateral growths back in the ordinary way and then remove all the loose bark from the individual rods and spurs, burning the prunings and bark thus removed. Next wash the vines with soapy water made by dissolving a quarter-pound of soft soap in one gallon of hot water. Keep the mixture well stirred, and apply it with a stiff brush to every portion of the vine. After this has been done smear the vines thoroughly with a mixture of coal-tar and clay, consisting of one-part of the former to nine parts of the latter. The clay should be dried and powdered, so that it may be passed through a quarter-inch sieve. Measure the pulverised clay into a large flower pot (having a lump of stiffish clay put into the hole in the bottom), using a three-inch flower pot as a measure. Put the measure of tar into the vessel after the specified quantity of clay has been deposited therein. Work the mixture well together, afterwards adding sufficient boiling water to give it the consistency of ordinary paint and applying it to the affected vines, as indicated above, with a stiffish paint brush, keeping the mixture well stirred meanwhile. Prior to doing this the glass and woodwork of the vinery should be well washed with soft soapy water, and the plaster and brickwork close down to the vine border with hot liquid lime. This done, replace the loose surface soil with new compost, following with a surface dressing of horse-droppings and a good watering at the roots. The vines may be allowed to "break" into growth of their own accord in February or early in March."

Names of Plants.—*E. T.* 1, Begonia semperflorens; 2, Abutilon megapotamicum; 3, Solanum capsicastrum; 4, Liriope spicata; 5, Grevillea robusta; 6, probably Heuchera sanguinea; 7, Asparagus Sprengeri; 8, Cordyline indivisa. *W. G. H.* 1, Centaurea gymnocarpa; 2, Eccremocarpus scaber; 3, Eleaegnus pungens var. aureo-variegata; 4, Ligustrum coriaceum. *F. P. B.* A garden seedling of Aster ericoides. *F. A.* 1, Cotoneaster turbinata; 2, C. Simonsii; 3, C. thymifolia; 4, C. pannosa; 5, Berberis Wilsonae; 6, B. Soulieana. *D. D.* 1, Pyrus melanocarpa (nigra); 2, Phillyrea (Vilmoriniana) decora; 3, Pieris floribunda; 4, P. japonica.

Narcissi Bulbs Infested with Grubs.—*W. S. S.* The grubs in the Narcissi bulbs are the larvae of the small Narcissus Fly. Eumerus strigatus. This fly probably produces two generations during the year, the spring brood hatching out as flies in April or May. When planting takes place all soft bulbs should not merely be rejected, but burnt. Beds of Narcissi should be examined during the summer, and any bulbs that are not making normal growth dug up and burnt. As the flies prefer laying their eggs on or near the bulb, care should be taken that all bulbs are kept well covered with soil during the growing season.

Planting Trees for Firewood.—*W. A. C.* For firewood purposes the best trees to plant on soil of a chalky description are Beech, Elm (English and Scotch), Ash, Sycamore and Alder on dampish ground. They should be planted at nine feet apart and interplanted with Hazel, White Beam Tree, Birch, Hornbeam and Cherry for faggot wood. If the position is exposed, a double line of Austrian Pine around the margin of the wood is recommended both for shelter purposes and firewood value of the timber.

Planting Trees near other Gardens.—*V. H.* No legal objection can be taken by the owners of the two houses in question to your planting trees in the manner set out in your letter. Their objection that a distant view from their windows will be obscured is not valid because it has been held in the High Court that no action lies for obstructing a prospect or view; nor will an action lie for planting trees twenty-five feet away from a blank gable end which has no windows. Moreover, no action lies unless the adjoining owners can prove that they have enjoyed the access and use of light to their windows for a period of twenty years before action brought, which the owner of the new house obviously cannot do. You are therefore within your rights in planting the trees.

Plutophos.—*P.* Plutophos is a proprietary fertiliser, and the makers claim that it is new and do not disclose what it is made from. We imagine that it may be some form of ground mineral phosphate. Anyhow, we believe that it is quite a good source of insoluble phosphate, and, in its very finely-ground condition, reasonably quickly available. It should be suitable for fruit trees.

Potash for Vines and Chrysanthemums.—*C. R.* Muriate of potash may be applied to the root area of vines in the autumn at the rate of one ounce for the square yard, and again, if considered necessary, after the stoning period, but care is needed when using this form of potash during the growing season, half the amount recommended above sufficing at the latter period. For Chrysanthemums it may be used at the rate of four ounces to twenty-four gallons of water, also applied after the buds have been taken, and two or three times subsequently at intervals, but much will depend on the sesaon. Should the weather prove hot and dry, the above will be quite sufficient, as potash tends to harden the growth. Where a well-balanced vine and Chrysanthemum manure is used, which contains a good percentage of potash, less of the nitrate should be applied.

PREVENTION OF CHRYSANTHEMUM RUST.—*A. W. S.* Where Chrysanthemums have suffered from an attack of rust, steps should be at once taken to prevent a fresh attack. Make the cuttings in the usual way and then submerge them in a solution of sulphide of potassium at the rate of half-ounce sulphide to one gallon of rain water. After letting them thoroughly soak, place them in a sieve to drain, and then insert them. After the first potting, spray the young plants with a solution of sulphide of potassium and water at the rate of a quarter-of-an-ounce of the former to one gallon of the latter. Subsequent sprayings should be given at intervals.

RAISING CONIFERS FROM CUTTINGS.—*Old Reader* Cupressus, Thuyas and Tsugas root readily from cuttings inserted during the autumn in sandy soil under the shelter of a west wall, covering them with cloches or handlights. Pines, Abies and Piceas are much more satisfactory when raised from seeds. If cuttings are used they should be made from shoots growing at the tops of the trees. Nurserymen who use this method of propagation when seeds are not available, cut out the leaders of the stock plants; this causes the plants to produce several shoots, which are taken off and inserted as cuttings. Growths taken from side branches of these three Conifers do not make satisfactory trees.

R.H.S. HALL.—*F. H.* The extreme length of the Royal Horticultural Society's Hall, inside, is 130 feet, and its width, 72 feet 6 inches.

SPRAYING FRUIT TREES.—*P.* Bordeaux mixture is rather better than lime-sulphur for the prevention of scab and of bud infections of canker, though there are some tender varieties of Apples which will not withstand Bordeaux mixture after blooming. Lime-sulphur is the better fungicide for use against mildews. It is also the wash which is now employed against bud mite of Black Currants, for which purpose Bordeaux mixture would be useless. Lime-sulphur may also be used as a winter wash for cleansing the trees.

TENNIS LAWN DRESSING.—*A. S. W.* We should not recommend such a heavy dressing of the "kiln dirt" as stated in your letter, for fear of mechanical troubles. The chief value of the material would be as a base for chemical manures. If the kiln dirt can be obtained for the cost of carting, or a little more, it would be useful for digging into the soil of the kitchen and the flower gardens.

VIOLET LEAF BLOTCH.—*V. de T.*—The Violet leaves are suffering from a bad attack of Ascochyta violae, generally known as the Violet-leaf blotch. An excess of moisture both at the roots and in the surrounding atmosphere favours the disease, and it is always desirable to remove affected foliage directly the disease is noticed, otherwise the trouble will spread rapidly; indeed, the spores may be distributed readily by watering and syringing the plants. A light sprinkling of lime and sulphur on affected leaves will help to arrest the disease.

Communications Received.—A. G.—A. B.—H. B. O.—W. D.—H. M.—W. A.—J. J. B.—J. A. P.—A. S.—E. H. M.—C. C. R.—G. K.—R. H. C.—E. G. J.—W. B.—J. B.—E. H. W.—C. L.—J. A. P.

MARKETS.

COVENT GARDEN, Tuesday, November 30th, 1926.

Plants in Pots, etc.: Average Wholesale Prices.

(All 48's except where otherwise stated).

	s. d. s. d.
Adiantum cuneatum per doz. ...	10 0 12 0
—elegans ...	12 0 15 0
Aralia Sieboldii	9 0 10 0
Araucarias, per doz.... ...	30 0–42 0
Asparagus plumosus ...	12 0–18 0
—Sprengeri ...	12 0–18 0
Aspidistra, green	26 0–60 0
Asplenium, doz.	12 0–18 0
—32's	24 0–30 0
—nidus ...	12 0–15 0
Cacti, per tray —12's, 15's ...	5 0—7 0
Cyclamens, 48's, per doz. ...	18 0–21 0
Chrysanthemums, in variety, 48's, per doz. ...	18 0–30 0
Crotons, doz. ...	30 0–45 0
Cyrtomium ...	10 0–25 0

	s. d. s. d.
Erica gracilis, 48's, per doz.	24 0–36 0
—60's, per doz.	9 0–12 0
—hyemalis, 48's, per doz. ...	24 0–30 0
—60's, per doz.	12 0–15 0
—nivalis, 48's per doz. ...	24 0–36 0
—60's „ ...	12 0–15 0
—72's „ ...	8 0—9 0
Hydrangeas, white, 48's per doz.	24 0–30 0
Nephrolepis in variety ...	12 0–18 0
—32's	24 0–36 0
Palms, Kentia	30 0–48 0
—60's	15 0–18 0
Pteris, in variety	10 0–15 0
—large, 60's ...	5 0—6 0
—small ...	4 0—5 0
—72's, per tray of 15's ...	2 6—3 0
Solanums, 48's, per doz. ...	12 0–18 0
—60's, per doz.	9 0–10 0

Cut Flowers, etc.: Average Wholesale Prices.

	s. d. s. d.
Adiantum decorum, doz. bun.	15 0–18 0
cuneatum, per doz. bun. ...	10 0–12 0
Asparagus plumosus per bun., long trails, 6's ...	2 6—3 6
med. sprays	1 6—2 6
short ...	0 9—1 3
—Sprengeri, bun. long sprays	1 6—2 0
med. „	1 0—1 6
short „	0 4—1 0
Bouvardia, white per doz. bun.	12 0–15 0
Camellias, 12's, 18's per box...	2 6—3 0
Carnations, per doz. blooms...	3 6—5 0
Chrysanthemums, white, per doz.	2 6—5 0
—bronze „	3 0—5 0
—white, per doz. bun. ...	6 0–10 0
—bronze, per doz. bun. ...	6 0–12 0
—yellow, per doz. blooms ...	2 6—4 0
—yellow, per doz. bun. ...	9 0–12 0
—pink, per doz. blooms ...	3 0—6 0
—pink, per doz. bun. ...	9 0–15 0
—red, per doz. blooms ...	3 0—5 0
— — per doz. bun.	9 0–12 0
—specimens, per doz. blooms...	15 0–18 0
—Single Varieties— disbudded blooms, per doz. ...	2 6—4 0
—spray, per doz. bun.	12 0–18 0
Croton leaves, per doz. ...	1 9—2 6
Fern, French, per doz. bun.	10 0–12 0
French Flowers—	
—Acacia (Mimosa), per doz. bun.	12 0–15 0
—Eucalyptus, per pad	5 0—6 0
—Ruscus, green, per pad ...	6 0—8 0
—Myrtle, green, per doz. bun.	1 6—2 0
—Narcissus, Paper White, per doz. bun.	2 6—3 0
—Solanum berries, 300's, per pad	7 0—9 0

	s. d. s. d.
French Flowers—	
—Violets, Parma, per bun. ...	3 0—4 0
Gardenias, 12's, 18's per box .	6 0—8 0
Heather, white, per doz. bun.	6 0—9 0
—pink, per doz. bun. ...	6 0—8 0
Honesty, per doz. bun. ...	15 0–18 0
Lilac, white, per doz. stems ...	6 0—7 0
Lilium auratum, per doz. blooms ...	10 0–12 0
—longiflorum long, per doz.	4 6—5 0
—speciosum rubrum, long, per doz. blooms ...	3 6—4 6
—short, doz. blooms ...	2 0—2 6
Lily-of-the-Valley, per doz. bun.	24 0–36 0
Marguerites, yellow, per doz. bun.	2 6—3 0
Orchids, per doz.	
—Cattleyas ...	24 0–36 0
—Cypripediums per doz. blooms ...	6 0—8 0
Poinsettias, per doz. blooms ...	18 0–30 0
Ranunculus—	
—double scarlet	4 0—6 0
—white ...	4 0—4 6
—yellow ...	8 0–12 0
Richardias (Arums), per doz. blooms .	6 0—8 0
Roses, per doz. blooms—	
—Madame Abel Chatenay ...	3 0—4 6
—Molly Sharman Crawford	3 0—4 6
—Richmond ...	5 0—6 0
—Golden Ophelia	4 0—6 0
—Mrs. Aaron Ward ...	3 6—4 0
—Madame Butterfly	5 0—7 0
—Safrano, 24's per packet ...	2 3—2 6
Smilax, per doz. trails ...	3 0—4 0
Violets... ...	3 0—4 0

REMARKS.—There was an excessive supply of Chrysanthemums throughout the whole of last week. Roses and a few Carnations of best quality realised good prices, but other flowers were cheap. There was a better provincial trade. Supplies were not so heavy this morning, and there is every hope for general improvement during the next few days. Some fine blooms of Poinsettias are now available. Bunch Heston White, Winter Cheer and E. Wilcox are the latest varieties in Chrysanthemums; the best varieties amongst disbudded blooms are Autocrat, A. Brooker, December Gold and November Bronze. There is still a very fine selection of single varieties, both in spray and disbudded blooms, white, bronze and red varieties being specially good just now. All foliage is now firmer in price, including Asparagus plumosus, A. Sprengeri and Adiantum Fern. Smilax is more plentiful owing to a good and regular supply arriving from Guernsey.

Fruit: Average Wholesale Prices.

	s. d. s. d.
Apples, American—	
—York Imperial per barrel ...	20 0–24 0
—British Columbia	10 0–12 0
—Virginian Greening	28 0–30 0
—Oregon Newtown	10 0–12 0
— —Winesap ...	10 0–10 6
—Rome Beauty	9 0–10 0
—Nova Scotian—	
—Ribston Pippin, per barrel ...	22 0–26 0
—Blenheim Pippin, per barrel	22 0–26 0
—Greenings, per barrel... ...	22 0–26 0
—Others ...	20 0–22 0
Apples, English—	
—Newton Wonder ...	10 0–14 0
—Bramley's Seedling	10 0–20 0
—Oregon ...	10 6–13 6
—Californian Newtown Pippin	9 0–10 0
— —Winesap ...	10 0–10 6
— —Winesap per barrel ...	20 0–22 0
Bananas ...	12 0–22 0
Brazils, per cwt.	30 0–35 0
Chestnuts, Redon, per bag	12 0–18 0
—Italian ...	18 0–22 0
—Naples ...	25 0–30 0
Cob nuts, per lb.	0 8—0 9

	s. d. s. d.
Grape Fruit—	
—Blue Goose ...	25 0–32 6
—British Honduras ...	— 24 0
Grapes, English—	
—Guernsey Alicante	0 8—1 0
—Gros Colmar	1 6—3 0
—Alicante ...	1 0—3 0
—Muscat ...	5 0—8 0
Grapes Belgian	1 6—1 9
—Almeria ...	16 0–30 0
—Algerian Navel, per tray ...	7 0—8 0
Lemons, Messina, boxes ...	10 0–14 0
—cases	30 0–35 0
Oranges—	
—Californian ...	20 0–25 0
—Spanish, 300's, 200's... ...	23 0–30 0
Peaches, Belgian per doz. ...	8 0–20 0
Pears, English—	
—Comice. ½ sieve	9 0–12 0
—Special, per doz.... ...	4 0–10 0
Pears—	
—Californian Comice— ½ cases ...	20 0–22 6
—Winter Nelis, case	24 0–28 0
—Beurré D'Angou, ½ case ...	— 16 0
Pines	2 6—4 6
Walnuts, Grenoble ... bag .	11 0–14 0

REMARKS.—There has not been any unusual briskness in the demand during the past week, the general trading conditions being slow. There are ample stocks of imported Apples; the few good English Apples that are arriving are meeting a good reception. Hothouse Grapes are moderately plentiful, supplies of both English and Belgian being heavy, for the time of the year and prices have an easier tendency. Good Oranges are selling quite well, but samples are too much on the immature side to find a ready market. A few good English Doyenné du Comice Pears are selling well, but a considerable number of the fruits are too small for the best trade, and are difficult to clear at satisfactory prices. Some fine Doyenné du Comice Pears are also arriving from Belgium and California. Forced Beans from Guernsey are selling better, as are those from Madeira. New Potatos from Guernsey are popular with the trade, but some from the Scilly Isles which are dull and unattractive looking, sell slowly at much lower prices. A few forced Pears are selling fairly well at an exclusive figure. Supplies of Mushrooms are increasing, but they continue in demand. Green vegetables and Cauliflowers are an mproving market. Trade in old Potatos is firm.

GLASGOW.

Business in the cut flower markets continued to be quiet during the past week but, influenced by moderate supplies, prices of Chrysanthemums showed an improvement, especially the better-class blooms. The value of Phyllis Cooper ranged from 1/- to 1/6 per half-dozen; Mary Richardson, 1/- to 1/3; Jean Pattison, special, 10d. to 1/2, ordinary, 6d. to 10d.; White and Yellow Thorpe, special, 10d. to 1/2; Pagram, 10d. to 1/-; Market Red and William Holmes, 8d. to 1/-; Florrie King, Cranfordia and Blanche du Poitou, special, 8d. to 10d. ordinary, 3d. to 8d.; Carnations were 6d. dearer at 4/- to 4/6 per dozen, while Roses made a similar advance as follows: pink, 4/- to 4/6, red and white, 3/- to 3/6, French Narcissi were worth 2/- to 3/- per dozen bunches. Lilium longiflorum (Harrisii), 3/- to 4/-per bunch; Smilax, 1/3 to 1/6; Asparagus, large, 1/- to 1/6, small, 6d. to 9d.

Although values made little movement one way or the other, there was a more confident feeling regarding conditions in the near future. American Apples continued plentiful and cheap round previous quotations. Top grades of York Imperial declined 2/-, at 20/- per barrel, while first consignments of Canadian Northern Spy made 12/6 per case, and Kings 10/6 for extra fancy grades. Imports of Almeria Grapes indicated an acute shortage, especially for better qualities, which sold as high as 50/- per barrel. First consignments of Jaffa Oranges obtained 23/- for 144 counts, while Valencia fruit averaged 23/- (360's), and 30/- (240's). The first of the season's Mandarines ranged from 17/- to 20/- (420's). Winter Nelis Pears (Washington brands) were worth 14/6 to 15/6; Porto Rico Grape Fruit sold for 14/- to 15/- per case; Blue Goose Brand, 35/-. Prices for Scotch Gros Colmar Grapes remained steady at 3/6 to 3/9 per lb. A further advance of 6d. per dozen was registered in Tunis Dates.

Cucumbers were 3/- down at 15/- per dozen. Scotch Tomatos were slow to sell, and the prices, which ranged from 3d. to 9d. per lb, reflected the variation in quality. Lettuces at 2/6 per dozen, and Cauliflowers at 9/- per crate, repeated the previous week's values of these vegetables.

GARDENING APPOINTMENT.

Mr. C. Hobbs, for the past eighteen months gardener to Col. SPENCELEY, Ashley House, Box, as gardener to the DOWAGER LADY CUNLIFFE, Headley Court, Epsom.

THE
Gardeners' Chronicle
No. 2085.—*SATURDAY, DECEMBER* 11, 1926

CONTENTS.

Alpine garden—
  Corydalis cheilanthifolia 469
American notes ... 473
Belgian Civil Servant's distinction 462
Books, notices of—
  Diary of an Eighteenth Century Garden 473
  R.H.S. Gardeners' Diary for 1927 ... 462
  The New Book of Trees 473
Carnations, rust on perpetual 468
Celery, failure of ... 477
Chrysanthemums in colour 462
Classical and legendary gardens 470
Columbines some new 467
Covent Garden Market 463
Entomology, the progress of economic ... 474
Florists' flowers—
  Raising Chrysanthemums from cuttings 468
  Some old-time garden Pinks 468
Fruit register—
  Apple Joy Bells ... 476
  Apple Laxton's Superb 476
  Apple London Pippin 475
  Plum, Transparent Gage 475
"Gardeners' Chronicle" seventy-five years ago 463
Garden notes from South-west Scotland 470
Gooseberries, die-back disease of 477
Hardy flower border—
  Aconitum Wilsonii 467
  Campanula persicifolia 467
  Cimicifuga simplex . 467
Hardy fruit garden—
  Planting Apples in grass land ... 476
Hebe, the genus ... 462
Hedges, garden ... 472
Indoor plants 466
Iris garden—
  Iris Flammenschwert 469
Jekyll, Miss Gertrude 462
National Institute of Agricultural Botany 461
Nova Scotia Apple orchards 462
Nursery taxation in Austria 463
Obituary—
  Clarke, James ... 479
Orchid notes and gleanings—
  Cypripedium Memoria H. S. Leon 466
Parks and gardens, public 475
Potato crop, the ... 462
Rainfall at Mill Hill in November 462
Roadside fences ... 472
Societies—
  Ayr Chrysanthemum 478
  Birmingham and Midland Counties 478
  Chamber of Horticulture 478
  Corbridge-on-Tyne and District Gardeners' 478
  Manchester and North of England Orchid 479
  Smithfield Club ... 479
Trees and Shrubs—
  Enkianthus ... 472
  Picea sitchensis ... 471
Trough gardens ... 469
Vegetable garden—
  Brussels Sprouts ... 476
  Groundwork ... 477
Vine and Peach mildews 477
Water garden—
  A new hardy Mimulus 468
  Senecio clivorum ... 468
Week's work, the ... 464
Wild garden—
Campanula lactiflora... 468

ILLUSTRATIONS.

Aquilegias raised at the Central Experimental Farm, Ottawa 467
Carnation The Favourite... 463
Creighton, Mr. A., portrait of 462
Iris Flammenschwert 469
Picea sitchensis 471
Plum Transparent Gage 475
Ruscus aculeatus 465

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last fifty years at Greenwich, 40.3.

ACTUAL TEMPERATURE—
***The Gardeners' Chronicle* Office, 5, Tavistock Street, Covent Garden, London, Wednesday, December 8, 10 a.m. Bar. 30.6. Temp. 45°. Weather, Sunny.**

The National Institute of Agricultural Botany.

It is pleasant to learn from the Seventh *Report* of the Council that the National Institute of Agricultural Botany continues to extend and consolidate the admirable work which it is doing for agriculture and horticulture. In no direction having relation with horticulture is the Institute doing more useful work than in the investigation of those obscure diseases known as Mosaic diseases, which take such a heavy toll of the Potato crop; and although in the year under review the Institute is unable to announce any discovery of fundamental importance, the further information which is afforded by the trials that "Mosaic disease follows the seed" is of great practical importance. For, evidently, if it be a fact—as it apparently is—that the disease is distributed in the seed-sets, a way may be discovered whereby stocks may be certificated as being "fit for planting" in the sense that not too heavy an infection occurs in them. The work of variety-testing which is, of course, of the utmost importance, is now being carried out at five sub-stations, as well as at the head station at Cambridge, and as the *Report* shows, these stations are kept fully occupied with trials of varieties of Wheat, Winter Barley, Winter Oats, Winter Beans, Spring Barley and Oats, Mangolds, Swedes, Sugar Beet and Lucernes. The arrangement with the Cambridge Plant Breeding Institute whereby the N.I.A.B. tests and, where necessary, distributes the new varieties raised at the former Institute, is being continued. So far one variety of Wheat, two of Oats, one of Barley and numerous varieties of Potato have been tested and as a result of this arrangement the Wheat variety Yeoman II has been put on the market. Scarcely less important is the work done by the Institute in maintaining pure lines of varieties, the value of which has already been proved and it is satisfactory to record that at the present time pure line stocks of the Wheats Yeoman II and Little Joss are being grown and will be multiplied at the Station, so that there is no fear that these excellent varieties will deteriorate by chance mixing with other varieties, as is apt to occur when extreme precautions are not taken. In like manner the Institute is "growing on" under observation a disease-free stock of the Potato Abundance with a view to its distribution, should it prove of value superior to that of existing stocks. It cannot be emphasised too strongly that this type of work is of great importance and that by the nature of the case much of it is bound to prove disappointing. Someone ought to do it, for of many varieties called, some certainly will be found worthy to be chosen. No less than the variety-testing the seed-testing activities of the Station are growing rapidly. No fewer than 22,884 samples were tested during the year under review—an increase of 4½% over the number received in the previous year. Nor does the Seed Testing Station confine itself only to this routine work. It engages also in the investigation of many practical problems, as for example, the investigation of seed-borne diseases. Altogether, the Council and Fellows have reason to be satisfied with the progress which the Institute is making, and it is to be hoped that as the value of the work becomes more widely known, more agriculturists and horticulturists will enrol themselves as Fellows of the N.I.A.B.

"The Gardeners' Chronicle" Almanac for 1927.—Our Almanac for the ensuing year, giving the dates of the principal flower shows in Great Britain and of the meetings of horticultural and botanical societies, is now being prepared and will be published in an early issue of the New Year. Secretaries of horticultural, botanical and other societies are requested to send the dates of their shows, meetings, etc., so soon as possible, in order that they may be included in the Almanac.

Christmas Trees, Holly and Mistleto.—The imminence of the Christmas season is shown in striking fashion in Covent Garden Market, where thousands of Christmas trees, mainly British, and varying in height from fifteen inches to twenty feet or more, are being sold freely to retailers, hotel proprietors, restaurant keepers, and big stores all over the country; the trees appear to be in unusually good condition. Holly is fairly plentiful, and in addition to home-grown, handsomely-berried sprays, there are packages of small sprays, also well-berried, sent by French exporters. Mistleto will be more plentiful in another week or ten days; at present there are moderate supplies from France, in crates, and also in wicker "pads," and a small quantity from home sources. Like the Holly, Mistleto this year carries a profusion of berries.

Award of Garden Merit.—The *Journal* of the Royal Horticultural Society for November records the Award of Garden Merit to three plants, *i.e.*, Rhododendron Nobleanum, Rhododendron praecox and Scilla bifolia. This brings the number of awards up to fifty-seven. Rhododendron Nobleanum was raised at the Knap Hill Nursery nearly one hundred years ago by crossing R. arboreum with R. caucasicum, and it is one of the earliest of Rhododendrons to flower. The *Journal* recommends growers to select plants with the best type of flowers, for the cross has been made many times and the results are not always the same. R. praecox also flowers very early, and in some years the blooms are destroyed by frost before they are fully opened. This hybrid was raised by Mr. Davies at Ormskirk about 1860. Scilla bifolia flowers in February and early March, and has been cultivated in English gardens for many years. There are many forms of this species, seven of which are described in the *Journal.*

Town Gardens.—On Tuesday, December 14, Mr. W. Stewart, N.D.H., Superintendent of the Royal Hospital Gardens, Chelsea, will lecture on "Town Gardens—How to Achieve Success." The lecture is to be given under the auspices of the London Garden Guild, at Prince Henry's Room, 17, Fleet Street, E.C., and will commence at 6.30 p.m. Lt.-Col. P. F. Story will preside.

Luculia Pinceana Flowering in the Open at Tresco.—Mr. G. W. Andrews, the veteran gardener at Tresco Abbey, Isles of Scilly, writes "Having read, with interest, the notes on Luculia, by Mr. Ralph E. Arnold, I thought the readers of *The Gardeners' Chronicle* would like to know that Luculia Pinceana is now flowering in these gardens for the first time in the open air. Planted two years ago, one specimen has made healthy growth and is flourishing in the mild and equable climate of the Scilly Isles.

Presentation to a Gardener.—Mr. James Lyon for the past fifteen years gardener to ex-Provost Mungall, Croftweit, Crieff, has been presented by Mr. and Mrs. Mungall with a gold watch and chain, in recognition of faithful service.

New Superintendent of the Keighley Parks.—We learn with very great pleasure that Mr. James Bailey, who has been gardener at Scott Park, Burnley, for the past seven years, has been appointed as Park Superintendent to the Keighley Corporation, and will take up his new duties on January 3. Mr. Bailey was for several years engaged in Lord Shuttleworth's gardens at Gawthorpe and was previously employed in Lord Trevor's gardens in North Wales. He has had considerable experience in park management as he entered service under the Burnley Corporation in 1910.

The late Mr. T. W. Sanders.—The estate of the late Mr. T. W. Sanders, for many years Editor of *Amateur Gardening*, whose death was recorded in our issue for October 23, has been declared for probate of the gross value of £1,986 5s. 0d., with net personalty, £1,832 17s. 7d. Probate of the will has been granted to his son, Mr. Horace William Sanders, journalist, and his daughter Miss Annie Olive Sanders, of 124, Embleton Road, Lewisham.

Poisonous Plants on the Farm.—In the current issue of *The Journal* of the Ministry of Agriculture, Mr. H. C. Long points out that poisonous plants on the farm are not confined to those which will commonly be found on the arable and grass land. They may, in fact, be (1) wild plants in the ordinary sense (*e.g.*, Water Dropwort, Meadow Saffron); (2) plants which are commonly grown in gardens and shrubberies for ornamental purposes (*e.g.*, Yew, Monkshood); or (3) feeding stuffs which may occasionally contain injurious ingredients (such as Ergot or Corn Cockle,), or be in themselves poisonous (*e.g.*, Java Beans or Indian Peas). Mr. Long considers that a number of the Buttercups and their near relatives must, unfortunately, be included in a list of poisonous plants, their flowers being the most harmful parts, and he draws special attention to the harmful character of the Lesser Spearwort, Ranunculus Flammula; the Celery-leaved Buttercup, R. sceleratus, and the Acrid Buttercup, R. acris, but he adds that the poisonous property is volatile, consequently it disappears when the growth of these species is dried and converted into hay.

The R.H.S. Gardeners' Diary for 1927.—At this season of the year gardeners will be thinking of diaries for 1927, and many of them will regard the R.H.S. Gardeners' Diary as the one most suitable for carrying in the pocket. As in previous years, this handy little diary is published jointly by Messrs. Charles Letts and Co. and the Royal Horticultural Society, but the issue for 1927 is edited by Mr. F. R. Durham, the new Secretary of the R.H.S. The usual useful features are maintained, including a brief fruit-growing calendar, a vegetable-growing calendar, a bulb-planting table, an income and wages table, and much other useful information in very handy form. The diary may be obtained from our Publishing Department, price 2/3, post free.

Sale of Wines at the Beaune Hospice.—On November 14 was held the annual sale of wines at the Hospice of Beaune, in Burgundy. The prices ruled very high, on account of the exceptionally good vintage quality of the year; the highest amount paid was 30,000 francs, for two casks of "Guigone de Salins," the total sales reaching 1,303,677 francs for 360 hectolitres. This is the seventy-eighth occasion on which this celebrated and picturesque sale has taken place, and the ceremony attracts to the pretty little town of Beaune, the viticultural capital of Burgundy, a large number of buyers and interested spectators. The Beaune hospices were founded in 1443 by Nicolas Rolin, Chancellor of Burgundy, and the famous vineyard, which now occupies 1,300 ares, was created in 1459. Twenty expert vinegrowers directed by the administrative commission of the hospice, cultivate and harvest the fruit and make the wine according to the time-honoured traditions, allied to the most modern technical knowledge. In order to honour the memories of the founders and benefactors of the institution, the various wines are designated each one by a name—for example, Guigone de Salins, Volnay-Blondeau, Alose-Corton, etc. The total sum obtained by the sale is devoted, half to the twenty vinegrowers, half to the funds of the hospice, to help to provide for the needs of the aged, orphans, and sick maintained by the establishment.

Chrysanthemums in Colour.—After a lapse of eight years, due, no doubt, to war and post-war conditions, our contemporary, *Die Gartenwelt*, of Berlin, has recommenced giving occasional coloured plates, and the first one, published with the issue of December 3, is a very fair representation of two popular Chrysanthemums of English raising, Mona Davis and Majestic. The plate has apparently been reproduced from a painting; the flowers are pleasingly grouped and the effect quite good.

A Potato Week.—It would seem that Potatos are not eaten so largely as to satisfy the restaurateurs; a failing that must come as a surprise to most, who look upon the tuber as a national and indispensable article of diet, and would consider any propaganda as an unnecessary waste of time and energy. However, there are those who feel it was required and, as it is Cattle Show week, it seemed to those concerned a fitting time to bring before the notice of the public the fact that there are numerous sorts of the tuber, for one of the principal hotels in the West End of London has served a number of varieties free to guests, who have been invited to taste and record their preferences. It seems that the Potatos have been served in twenty-five different ways, though the skilled chef is acquainted with hundreds of methods of rendering the tuber attractive and tempting as food. The Potatos have been served as allumettes, champignons, cocottes, dentelles de pomme terre, soufflés and in other forms. At the time of going to press, we believe that the voting is still proceeding, but our latest advices are that the three most popular varieties with diners are British Queen, King Edward VII and Red King, in the order named, which speaks well for the critical taste of the clients of the hotel.

Mr. Archibald Creighton.—For the second time the City of Carlisle has elected Mr. Archibald Creighton as its mayor. Five years have elapsed since he held a similar position, and during the intervening period he has taken a particularly active part in all that concerns this ancient border city. Mr. Creighton served his apprenticeship with Messrs. Clark Bros. and Co., Ltd., Nurserymen and Seedsmen, of Carlisle, and with the exception of two short periods during which he was gaining further trade experience in Liverpool and Birmingham, he has been continually connected with the firm for a period of over thirty years. In 1913, when the business was formed into a private company, Mr. Creighton was appointed Secretary and General Manager, and on the death of Mr. W. Clark, the senior partner, he became Managing Director. Notwithstanding the care and administration of a large business and the many calls upon his time in connection with civic duties, Mr. Creighton does much other useful public work. For instance, he is Director of the Cumberland Co-operative Building Society, has been Chairman of the Carlisle Chamber of Commerce, and takes an active interest in the Carlisle Rotary Club and Carlisle Bowling Club. At one period he was president of the Carlisle Free Church Council and is at present the acting secretary of the Cumberland branch of the Lancashire Congregational Union.

MR. ARCHIBALD CREIGHTON.

Belgian Civil Servant's Distinction.—M. Edgar Roddigas, who is justly famous for his services to Belgian colonial horticulture and agriculture, has completed twenty-five years in the service of the State and has received the Civic Medal of the First Class. In 1901, he joined the staff of the Ghent Horticultural and Agricultural College. Two years later he took up an administrative post in connection with the Congo, and was one of the most devoted collaborators of the Colonial Minister; after the Armistice, he was attached to the "Service des Conférences" of the Ministry, in which he has signally distinguished himself in the administration and organisation of exhibitions and in many other ways. Last year he was awarded by the Ministry of Agriculture the Special Agricultural Decoration of the First Class.

Miss Gertrude Jekyll, V.M.H.—On Tuesday of last week Miss Jekyll received many congratulations from her friends and admirers on the occasion of her eighty-third birthday. Miss Jekyll has made for herself such a special place in horticulture that it is not generally known that she also excels in many forms of applied art, such as wood-inlaying, carving, carpentry, repoussé work and embroidery. Miss Jekyll originally had great leanings towards painting as a profession, but realising the handicap her short sight would be, she relinquished the idea.

Nova Scotia Apple Orchards.—There are Apple orchards in Nova Scotia that are probably 150 years old and still yielding fruit. The history of Apple culture in the Annapolis Valley dates back further than 150 years. According to the Natural Resources Intelligence Service of the Department of the Interior at Ottawa, there was an official census taken by the French authorities at Port Royal (Annapolis) in the year 1698 which showed 1375 Apple trees among thirty-four growers. In 1861 the first full cargo of Nova Scotian Apples was shipped to London. Nova Scotia now produces some 2,000,000 barrels of Apples annually, largely for the export trade.

November Rainfall at Mill Hill.—Mr. J. A. Paice informs us that the total rainfall in the Sunnyfield Gardens, Mill Hill, for November, was four-and-three-quarter inches; this fell on seventeen days; the greatest daily fall was one inch on the 29th.

Exhibition at Liegnitz in 1927.—At Liegnitz, in Silesia, several important exhibitions were held previous to the war, notably the big German and Silesian Horticultural Exhibition in 1910, which attracted visitors from all parts of the German Empire. Now the town is preparing a large exhibition to take place from June 25 to the middle of September, 1927, in which the active participation of two important societies—the Union of German Rose-lovers and the German Dahlia Society—is an element assuring success.

The Genus Hebe.—Those who grow and study the New Zealand Veronicas will have learned from notes which have appeared in our pages that botanical authorities consider many of these species should be included in a new genus under the title of Hebe. In 1925, Dr. L. Cockayne and Dr. H. H. Allan contributed a paper to the Philosophical Institute of Canterbury, New Zealand, in which they set forth the present taxonomic status of the New Zealand species of Hebe. In this paper no fewer than seventy species and six hybrids were referred to Hebe, many of them being plants well-known to British cultivators as Veronicas. All who desire to extend their study of these interesting plants will be glad to learn that the paper referred to has been printed in the *Transactions of the New Zealand Institute*, Vol. 57, 1926.

A New Flower Market in Vienna.—The Austrian Horticultural Society has made a new departure in opening a wholesale flower market of its own in Vienna. Stands of various sizes are provided and are being let, some by the year and others by the day.

The Potato Crop.—The Ministry of Agriculture announces that the detailed estimates of the yield per acre of Potatos confirms previous forecasts that this year's crop is well under the average in most parts of the country. Over the whole of England and Wales the yield per acre is only five-and-a-half tons, or three-fifths of a ton below the ten years' average, and one ton less than in 1925. The worst crops are in the Isle of Ely, where the yield averages only three-and-a-half tons per acre, or a little more than half the ten years' mean for that county, while Huntingdon, with a yield of only three-and-three-quarter tons, has a deficiency of two-and-a-quarter tons per acre. Yields are more than one ton per acre below the average in Norfolk and Lincoln (Holland). In the north and south-west of England and in Wales about average crops have been obtained on the whole, but results vary a good deal in the different counties. Growers in Lancashire, Cheshire and the West Riding of Yorkshire have lifted crops a little above their respective averages. The total production on agricultural holdings in England and Wales is estimated at 2,763,000 tons, or 450,000 tons less than in 1925, and much the same as the short crops of 1923 and 1924, when the total production in England and Wales was 2,758,000 tons and 2,696,000 tons respectively. There is a good deal of disease among the crop in the eastern counties, and the tubers are generally small throughout the country, but the crop was clamped in clean and dry condition.

French Chrysanthemum Congress.—The annual Congress of the Société Francaise des Chrysanthémistes took place at Blois from the 4th to the 7th of November, in conjunction with the exhibition arranged by the local horticultural society, which was a particularly fine one. The largest Chrysanthemum growers of Paris and the principal towns of France responded to the invitation sent out by the Secretary, and the result was a show which was comparable to those held in Paris or Lyons. A Belgian grower, who preferred to remain anonymous, offered a prize of 100 frs. for the best incurved variety, and this was unanimously awarded to the variety Deuil de Paul Labbé, shown by its raiser, M. Morin, of La Rochelle. The Congress met in the Chamber of Commerce, under the presidency of M. Guillon, Inspector-General of Agriculture, supported by a number of horticultural notabilities. A number of interesting questions were discussed, and the venue of the 1927 Congress was fixed for Paris to coincide with the Centenary Exhibition of the Société Nationale d'Horticulture.

Covent Garden Market.—Reference was made in our issue of December 4 (p. 441) to the opposition of the present residents on the Foundling Hospital site, Bloomsbury, W.C.1 (on the borders of Holborn and St. Pancras), to the proposed scheme of removing to this site the market now in Covent Garden. With the object of defeating this project by arousing public opinion against it, an association has been formed under the name of the Foundling Estate Protection Association, under the presidency of Sir Johnston Forbes-Robertson, and the first public meeting of the association was held at Kingsway Hall on December 6. Two grounds of objection appear to exist; one, the commercialisation of what is now purely a residential area; and two, the destruction of the beautiful square gardens on the estate, known as Brunswick Square and Mecklenburgh Square. It would appear that the projected market would cover the whole of the ground now occupied by the Hospital itself, and that the trees in the squares would be cut down, and the ground used as a parking place for market carts. Considering how few open spaces are still left in the centre of London, and the age and beauty of the trees thus threatened, it is to be hoped that whatever the ultimate fate of the remainder of the estate, the two squares at least may be preserved.

Nursery Taxation in Austria.—After prolonged negotiations with representatives of the Austrian nursery and gardening interests, the Government at Vienna has fixed the tax payable by nurserymen at Gr. 1.5 per square meter of ground per annum for 1926, and Gr. 2 for 1927. Nurseries with a retail shop pay only half these rates, but for the shop they have also to pay a special tax applicable to florists. Cemetery and landscape gardeners employing jobbing men are taxed on a different basis, and they have to pay 2·2% on the total of the wages paid, slightly less than hitherto, the former proportion having been 2·5%.

Appointments for the Ensuing Week.—MONDAY, DECEMBER 13: United Horticultural Benefit and Provident Society's meeting; National Chrysanthemum Society's Floral and Executive Committees meet. TUESDAY, DECEMBER 14: Royal Horticultural Society's Committees meet; Jersey Gardeners' Society's meeting. WEDNESDAY, DECEMBER 15: Wimbledon Gardeners' Society's meeting; Royal Gardeners' Orphan Fund meeting. FRIDAY, DECEMBER 17: Manchester and North of England Orchid Society's meeting.

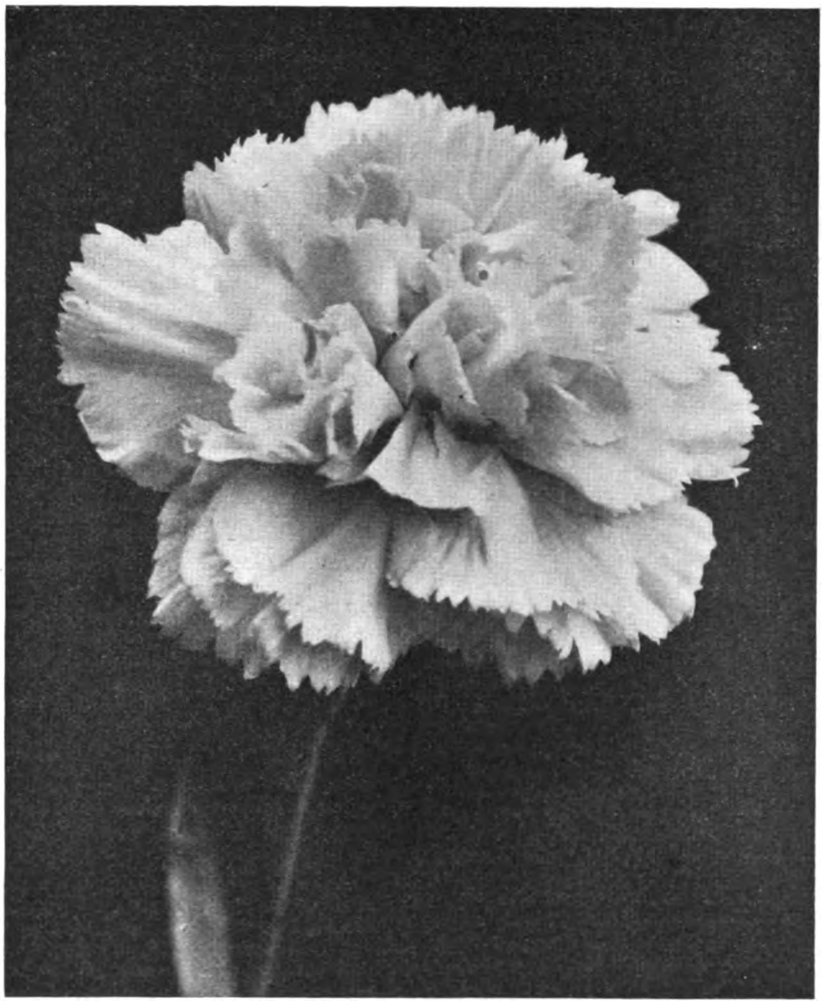

FIG. 203.—CARNATION THE FAVOURITE.

R.H.S. Award of Merit, November 30. Flowers clear pink. Shown by Mr. W. E. Wallace. (see p. 457).

"Gardeners' Chronicle" Seventy-five Years Ago.—*Hints to Persons Making a Garden.*—Rock, wood and water. To begin with the rock. No garden that pretends to represent the variety of Nature in her vegetable kingdom can dispense with something in the form of rock—be it natural or artificial; not merely by way of a feature in the pleasure ground, but as a situation or condition almost indispensable for certain plants; and those plants it may be observed, are some of the most interesting and elegant species that we have in cultivation. Great mistakes are frequently made in the selection of a site for rockwork, as well as in that of the plants supposed to be adapted to it. Of course, where the gardener is fortunate enough to have natural rock to deal with, he must take it as he finds it; but that is not often the case. With regard to the proper site for rockwork, a garden, to be complete in that particular, ought to possess two entirely distinct piles of rock, unless the situation and the scale of operations be so extensive as to allow of one pile of rock considerable enough to afford a sunny and a shady face, each large enough for the requisitions of that department. For the plants that like sunny rocks are chiefly those of warm or dry climates, sea-shore plants, or those of the Mediterranean rocky coasts, or of the arid parts of the east. Those, on the other hand, that prefer moist or shady rocks, are those of the Alps, or of the northern moors and mountains, Ferns, etc. The two, it will be evident, are hardly compatible. Primula minima and Asplenium fontanum would hardly assort with Crassula jasminiflora and Convolvulus Cneorum. The alpine and the Mediterranean, or maritime rocks, should be considered as quite distinct. On no rocks unless natural and on a very large scale, should those plagues, the creeping plants, be allowed. They are suited only to banks, generally to the shade. Every gardener will understand that the plants alluded to are such as Moneywort, St. John's Wort, Periwinkles, Lyciums or Honeysuckles. Trees ought not to be permitted near rocks destined for maritime plants, and but partially near those appropriated to mountain plants, though they will not injure Ferns or Orchidaceae. A rocky soil is not necessarily poor; a good natural soil, unmanured, but well-drained, suits maritime or Mediterranean rocks, and a damp, peaty gravel, perhaps with a slight trickling of water, will agree with alpine rocks. No plants should be grown on rocks but such as are naturally rock plants. *S., Gard. Chron., December* 13, 1851.

Publication Received.—*La Chrysanthème* by J. Lochot, Librairie Agricole de la Maison Rustique, 26, Rue Jacob, Paris. Price 12 francs.

The Week's Work.

THE ORCHID HOUSES.

By J. Collier, Gardener to Sir Jeremiah Colman, Bart., Gatton Park, Reigate, Surrey.

Coelogyne.—Plants of Coelogyne cristata are completing their growths, and flower spikes will be pushing from the bases of the last-formed pseudo-bulbs. At this period great precaution should be exercised when supplying water to the roots. The compost should be allowed to become dry between each application of water, which should not be sprinkled over the foliage so as to cause it to settle around the flower spikes, as the latter are liable to decay if moisture accumulates about them. Well-established plants will be benefited by occasional applications of weak manure water made from cow dung, just previous to the opening of the flowers. These useful winter-flowering Orchids succeed best when grown in an intermediate temperature. They appreciate a light position at all times, and the flower spikes will develop strongly if the plants are exposed to all the direct sunlight available at this season. In collections containing several specimens a longer succession of flowers may be obtained if one or two plants are placed at intervals in a slightly higher temperature. Other Coelogynes such as C. ocellata and C. elata, are developing flower spikes and should be well supplied with water until the blooms fade. Such species as C. Massangeana, C. flaccida and C. tomentosa are at rest and will need but very little water before the flower spikes appear or growth recommences. Others, such as C. Cumingii and C. sulphurea, that have recently bloomed, may be repotted if they require it.

Pleione.—The Pleione is commonly known as the Indian Crocus, and the cultivated species include P. Lagenaria, P. maculata and P. Wallichiana. After they have passed out of flower and when forming new roots from the bases of the green shoots, the plants should be repotted. Shallow pans that may be suspended from the roof-rafters, form the most suitable receptacles. Ample drainage is necessary. A suitable rooting-medium consists of equal parts fibrous loam, Osmunda-fibre and Sphagnum-moss, chopped into small portions and mixed with coarse silver sand. Pans of various sizes should be used. It is advisable to grade the pseudo-bulbs; those of the largest size may be arranged together, planting them about two inches apart; the smaller ones that are not expected to flower this season may be placed in separate receptacles. For two or three weeks after repotting little or no water should be given the roots, but when the plants are well established in the compost, water should be applied copiously until growth is completed. The plants should be grown in a light, airy position, near to the roof-glass in the intermediate house. The foliage should be sponged at intervals with a weak solution of a reliable insecticide in order to prevent attacks of red spider.

THE KITCHEN GARDEN.

By F. Streeter, Gardener to Lord Leconfield, Petworth Park, Petworth, Sussex.

Early Lettuce.—Make a small sowing in boxes of an early maturing variety of Cabbage Lettuce and raise the seedlings in a temperature of 50° to 55°. Sow thinly and transplant the seedlings four inches apart into other boxes when they are large enough to handle. Never allow them to become drawn.

Tomatos.—The young plants raised from seeds sown in November are ready for placing singly in sixty-sized pots. Use a compost consisting of three parts loam, one part leaf-mould or old Mushroom-bed manure and one part sand. The compost should be sterilised before using it, otherwise great trouble may be experienced with insect pests. Keep the seed-leaves just above the soil when potting the plants. Water with tepid water and place the pots on a draught-proof shelf in a house with a night temperature of 60°. During the past week we have kept the temperatures of our houses fairly even by the use of logs and banking up the furnaces at night with saw dust. Although this entails a constant watch it is much better than losing the crops. As the boilers are set in pairs, one is left with full draught on and the dampers of the other closed.

Green Crops.—Continue to clear all dead and decaying leaves from the crops, leaving everything as clean as possible. With such a wet time as experienced lately (we registered over eight inches of rain during November) Savoys and Coleworts are splitting, and these vegetables should be used as quickly as possible.

French Beans.—Continue to provide for a succession or Dwarf or French Beans by sowing from now onwards once a fortnight. Ascertain the requirements of the establishment and regulate the number of pots of each sowing. Stake and top-dress the plants with warm soil when needed and spray them overhead with tepid water daily. During the next few weeks very little water will be required at the roots. Gather the Beans before they become too large, using them on the small side.

Herbs.—Place a supply of Mint, Tarragon, and a few clumps of Chives in the forcing house for obtaining supplies of these herbs. The dried shoots picked in the autumn will now prove most useful.

HARDY FRUIT GARDEN.

By W. Auton, Gardener to Viscount Elveden, Pyrford Court, Woking, Surrey.

Red and White Currants.—The pruning of these bush fruits may be done at any time during the dormant season, though where birds are troublesome it is frequently deferred until the spring, just before growth becomes active. The operation consists in spurring the side shoots well back to the cluster of fruit buds developed at their base. If there is any tendency to overcrowding of the main growths it is better to remove entirely a few of these to give free access of light and air to every part of the bush.

Vines.—Outdoor vines should be pruned so soon as they reach a state of complete rest. If infestations of insects have been apparent in the current year the rods should be scrubbed lightly with a solution of Gishurst compound before training them in position again. When the vines are planted in a restricted border the surface soil may be removed so far as practicable and a compost of rich loam containing a liberal dressing of bone meal substituted.

Espalier Trees.—Apples and Pears grown as espalier trees are similar in their method of fruiting, as each bears fruits on spurs which develop from the sides of the branches, though some varieties have a tendency to form spurs on the ends of the branches. In the case of trees that have arrived at a full bearing state and have furnished the space allotted to them, the pruning consists chiefly in regulating the spurs. It is a mistake to leave the spurs so numerous that sun and light cannot penetrate readily to every part of the tree, and in the case of old trees which have become thickly spurred, judicious removal of the more projecting ones will often benefit the remainder, besides adding to the neatness in appearance of the tree. In training young espalier trees a good deal of judgment must be exercised to build up a well balanced tree furnished with fruiting spurs throughout. It will be necessary to shorten the leaders to one bud above where the next pair of branches is required for the next tier.

Basic Slag.—Although under modern conditions this fertiliser is not quite so valuable as formerly, it is still a good manure for fruit plantations, particularly on heavy soils. It is very slow-acting, and if not applied already this should be done forthwith. It may be scattered liberally on the whole ground in orchards, or for single trees over an area as far as the branches extend.

THE FLOWER GARDEN.

By F. C. Puddle, Gardener to Lord Aberconway, Bodnant, Taly-Cafn, North Wales.

Herbaceous Borders.—The trenching of herbaceous borders should be undertaken on every favourable occasion in order that the work may be completed in time for the soil to settle before replanting in early spring. If farmyard manure is scarce, the tops of the herbaceous plants and fallen tree leaves may be placed in the bottom of the trenches; any manure that is available may be reserved for incorporating with the soil near the surface. The borders should be made as rich as possible, for hardy herbaceous plants make heavy demands on the nutriment in the soil. It will be found an advantage to divide the plants as they are lifted. The strongest portions of the clumps, which are usually the outer growths, should be preserved, and if these are divided into pieces of suitable planting size, they may be more conveniently heeled in, in readiness for replanting, and much valuable time will be saved at that season. If it is desired to still further increase the stock of any particular plant, the weaker portions may be divided into small pieces and planted in the reserve garden for a season. Certain herbaceous plants are very effective when naturalised in the woodlands or wilder portions of the grounds, and surplus plants may be utilised for this purpose, but special care should be taken to plant only those species which will harmonise with a British landscape. Suitable subjects include Aconitums, Verbascums, Hemerocallis, Paeonies, Tradescantia, Campanulas, especially C. lactiflora, Anemone japonica, Erigerons, Geums and Oriental Poppies.

Planting Roses.—The long period of wet weather has seriously impeded the planting of Roses, and heavy soils are not likely to be in a suitable condition for planting for some time to come. Beds which have been trenched should not be planted until the soil is sufficiently dry; but when the intended planting is simply a matter of filling gaps or weak places in existing beds, the work may be proceeded with, provided a quantity of dry soil is available. Old potting soil is excellent for the purpose, and it may be improved by the addition of a six-inch potful of bone-meal to each barrow-load of soil. The holes should be made large enough for the roots to be placed in a natural position, bearing in mind that Roses are deep-rooting subjects. The excavated soil may be mixed with the dry compost in such quantities as to render the whole in a crumbly condition. Dwarf Roses should be planted so that the junction of the scion with the stock is just below the surface of the soil. After planting is completed, the beds may be given a dressing of lime or basic slag, which should be lightly forked in. Top-dressings of organic manure are best applied in the early spring.

FRUITS UNDER GLASS.

By T. Pateman, Gardener to Sir Charles Nall-Cain, Brocket Hall, Hertfordshire.

Pot Strawberries.—Where it is desired to have ripe Strawberries early, a batch of plants should now be started into growth. If a house can be set apart for this crop it will be an advantage for this reason, the plants may be stood on a mild hot-bed, which I consider is very beneficial for this early crop. Should any doubt exist with regard to the bed being too warm, the plants should not be plunged but placed directly on the bed, for preference on trellis work, as by leaving a space between the fermenting material and the pots there is less fear of growth being unduly hastened. It is essential that growth should develop steadily from the commencement of forcing to ensure sturdy foliage and stout flower spikes. When it is seen that the plants are growing freely they should be removed to a position near the roof-glass, but before taking the plants inside remove all decaying leaves and weeds. Even when care is taken to prevent worms from entering the pots some will enter through the drainage holes but they may be easily eliminated by the use of lime-water. Place about a peck of unslaked lime in a small tub of water, allow it to stand until it becomes clear, then apply some of the liquid to the roots. The worms will come to the surface of the soil and the lime will prove beneficial to the plants at the same time. The application of water to the roots at this season of the year will need every possible care, as overwatering in the early stages is sometimes the cause of failure. Strawberries in these gardens have not made good crowns this season, and this appears to be a general failing. See that plants are free from red spider; if this pest is detected dip the foliage in a mixture of soft soap and sulphur; this preparation will also check the spread of mildew.

Pot Figs.—Where a crop of ripe Figs is desired early, a start should now be made to secure this end. If the receptacles are partially plunged in some mild fermenting material the bottom heat will be of great assistance in helping the buds to break freely. If the weather is open and mild, fire-heat will not be necessary for the first ten days or so, but after this period the temperature should range from 50° to 55° at night with a rise of 5° during the day. The day temperature given only applies to dull, sunless weather: with sunshine it may rise 10° to 15°, but it is far better to err on the safe side than to hurry the growth through the early days of forcing. Syringe the trees with tepid rain-water each day about noon, when the ventilators, if the weather has warranted opening them, should be closed. Trees treated in this manner will soon develop young leaves and swell their fruits. At that time weak liquid stimulants may be given once or twice weekly. Although the rooting-area of the Fig needs to be restricted to produce fruiting wood, trees will respond to liberal feeding when growing under these restricted conditions.

PLANTS UNDER GLASS.

By John Coutts, Assistant Curator, Royal Botanic Gardens, Kew.

Clivias.—Where plants are grown in quantity a number may be placed in a warm house and afforded more water at the roots. By introducing successional batches to warmth a longer flowering season is obtained. The plants comprising the main batch should be kept somewhat dry at the roots; at the same time they must not be allowed to suffer from want of water. Large specimens in pots make excellent permanent plants in the conservatory; they also do well planted out in beds or borders in cool houses. Mealy bug sometimes harbours between the leaves and should be guarded against.

Begonia echinosepala.—Although this Begonia may be had in flower more or less all the year round, it is specially valuable for autumn and winter flowering. Small plants are useful for furnishing the stages, but this Begonia is seen at its best when grown as large specimens in eight-inch or ten-inch pots. Such plants attain a height of four feet to five feet and are very useful for furnishing the beds in the warm greenhouse. Cuttings root readily at any time in a warm propagating case. The plants in their younger stages are best grown in a temperature of about 55°.

Cacti.—Succulent plants require to be watered very carefully during the winter, and special care in this respect will be necessary when the temperature of the house is low, owing to shortage of fuel. Many of these plants are subject to attacks of mealy bug, which may be kept in check during the summer months by syringing. As syringing is not advisable during the winter, a sharp watch should be kept for the pest; when detected, fumigating should be resorted to, and any that survive the fumigation destroyed by a solution of soft soap or some other insecticide.

FOR NORTHERN GARDENERS.

By A. T. Harrison, Gardener to the Marquis of Ailsa, Culzean Castle, Maybole, Ayrshire.

Gladioli.—The corms of Gladioli lifted some time ago are ready for separating from last year's foliage and flowering stems, and should then be stored in trays or boxes. The corms should be stored as recommended earlier for Dahlias, seed Potatos, etc., so that a watchful eye may be kept on them during their dormant period. Each variety should be labelled distinctly. The small offsets are frequently dispensed with, but if it is desired to increase the stock of any variety without incurring additional expense, these offsets may be preserved and planted out next season in sandy soil; many will produce flowers in their second season. In milder parts of the country Gladioli may be left in the ground all the winter, but to get the best results they are best lifted and graded before replanting.

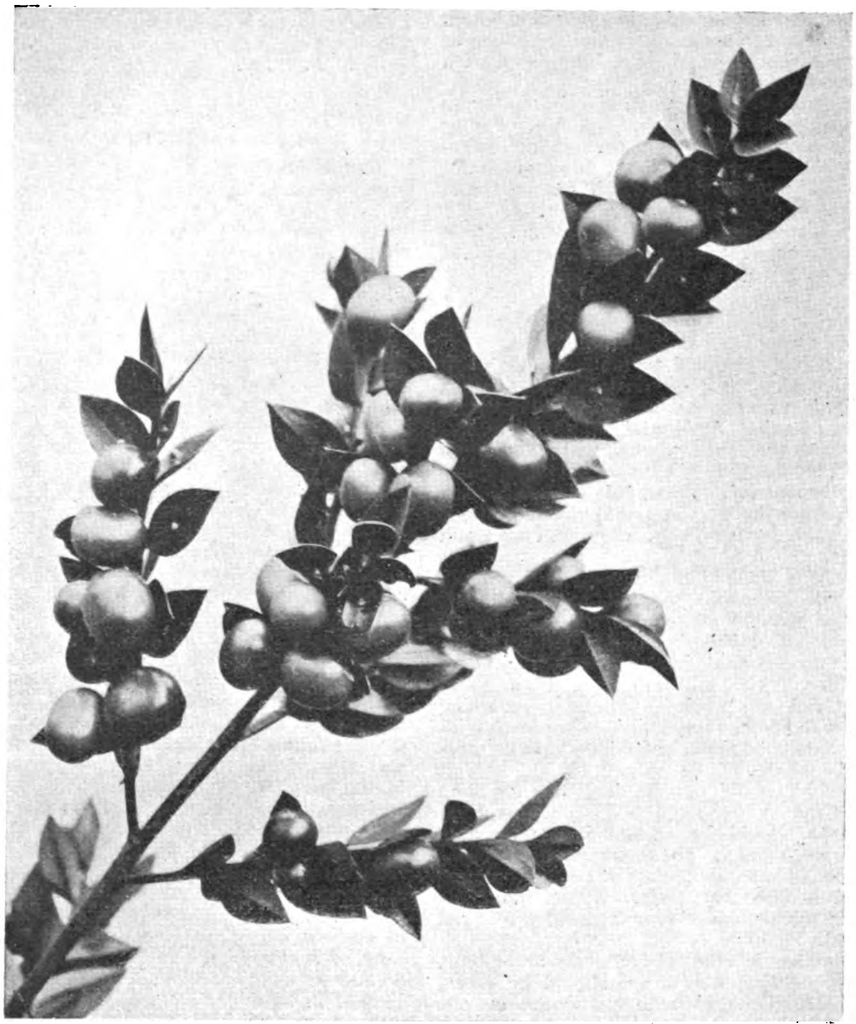

FIG. 204.—RUSCUS ACULEATUS.

R.H.S. Award of Merit, November 30. A monoecious form shown by Mr. Gerald Loder.

(see p. 458)

Violets and other Plants in Frames.—All plants in cold frames should be examined frequently, and any decaying foliage removed. Air should be admitted to the frames during the daytime in mild, sunny weather, but the frames should be closed in the afternoons if frost threatens; during long continued spells of hard weather the plants are better kept covered, as in this way the temperature inside the frame remains almost stationary; as growth is practically at a standstill with most occupants of the frames at this time of year, they may remain covered for a long period without becoming drawn. Light and air should, however, be admitted on all occasions when the temperature outside permits, as damp is often a more dangerous foe than frost to comparatively hardy plants when shut up in frames.

Root-cuttings.—A number of plants are difficult, if not impossible, to increase by the usual method of taking cuttings, including Romneya Coulteri, Anchusa italica and its varieties, Oriental Poppies and Tropaeolum speciosum, all of which, and many other very desirable plants, may now be readily increased by means of cuttings made from pieces of their thong-like roots. Dig carefully around the plant it is intended to increase by this method, with a digging fork, and select the most suitable roots for the purpose, which generally are those having a diameter of from one-quarter to half-an-inch. Cut these roots into pieces two to three inches long, insert them in sandy soil in pots or boxes, cover them to a depth of about one inch, and place them in an intermediate house. It is astonishing how quickly these portions of roots will produce top-growths, and so soon as the latter are showing above the soil the plants should be grown on in as cool conditions as possible until they are ready to be transferred singly to pots. Many enquiries have been made in former years regarding the propagation of the last-named plant, and it may be of general interest to know how it may be increased.

INDOOR PLANTS.

NERINES.

These beautiful, bulbous, greenhouse plants are invaluable for the decoration of the cool house during the autumn and early winter; few plants can compare with them when consideration is given to the ease with which they may be cultivated, their brilliant and attractive colours and their season of flowering, which is at a time when brilliant colours are most welcome.

The flowers are produced in umbels and will remain in good condition for many weeks in a cool, light house which is freely ventilated. They also make excellent material for house or table decoration as cut blooms intermixed with some graceful foliage.

The culture of Nerine is a simple matter to those who have a frost-proof greenhouse. Plenty of air and sunshine are two of their chief requirements. A mixture of good, fibrous loam, a little leaf-mould, sharp sand, charcoal and bone-meal furnishes a suitable compost. Efficient drainage must be provided, as the plants flower best when they have been established in their pots for a few years.

During the season of active growth after the flowering period, the plants should be placed in a sunny position, as near the roof-glass as possible, and encouraged to make good growth by feeding the roots occasionally, either with weak liquid manure or a little quick-acting fertiliser. During April and May the foliage will begin to turn yellow, when water should be withheld gradually to allow the bulbs to become thoroughly ripened. When this stage has been reached, store the pots in a cool place and keep the soil quite dry until signs of growth are again apparent.

So soon as the plants show signs of growth, which will be about August or September, stand the pots in saucers of water to ensure the soil being uniformly moist. Examine the drainage to see that it is efficient, prick over the surface of the soil and discard as much old material as possible without disturbing the roots, to allow of top-dressing the plants with a mixture of good loam, leaf-soil and a little well-decayed manure.

Repotting should not be done oftener than once in three or four years, and when disturbed the plants should be shifted into pots only just large enough to accommodate them, as Nerines bloom most freely when the roots are crowded in the receptacle. Water the roots carefully until the flower spikes are well advanced.

Propagation is effected by seeds or offsets, and both seedlings and offsets should be grown on and afforded the same treatment as the flowering bulbs.

Probably the best known species is N. Bowdeni, a native of Cape Colony, with large umbels of pink flowers, which have a deeper rose shading down the middle of each petal. This is one of the hardiest of the Nerines, and may be grown out-of-doors in many districts. A position at the bottom of a wall with a southern aspect suits it admirably; where Amaryllis Belladonna flowers in the open, Nerine Bowdenii makes a good companion to it.

Another species well worth growing is N. sarniensis, the Guernsey Lily, with pale salmon-coloured flowers. Its variety N. sarniensis corusca has brilliant orange-scarlet flowers, and is sometimes known under the name of Amaryllis corusca. N. s. c. major is a tall, free-growing form with orange-scarlet flowers. N. flexuosa is a species bearing large unbels of dainty flowers with narrow, wavy petals. N. f. alba is a desirable form bearing snowy-white flowers, the petals of which are beautifully recurved.

There are many beautiful hybrids; as propagation is a slow process, some of these are naturally expensive, but plenty of really good varieties are to be had at a moderate price. Amongst those which may be recommended are Brocade, of a bright rose colour, and Dainty Maid, a variety of a delicate silvery pink with narrow, waved petals. N. Fothergillii major has large umbels of bright salmon-red flowers and is a free grower.

N. Mansellii is a handsome, robust-growing plant, carrying large heads of cerise-coloured flowers. This hybrid does not usually flower until December, which is an advantage. Exonia is a fine variety of a deep rose colour. Queen of the Roses is a graceful type and very free-flowering. Louvain is a good salmon-coloured form, and Zema Buckhouse, a choice pale pink sort. Glory of Sarnia has flowers of brilliant scarlet, whilst Colossus has pale pink blooms. The petals of the last variety are waved and curled, and arranged in the form of an arch, with the pistil and stamens in a group, giving the individual flowers a spidery effect.

The Giantess is a large flower of a rose colour; Cladius, a deep rich crimson variety with a gold sheen. *F. W. G.*

STORING TUBEROUS PLANTS IN WINTER.

The successful wintering of plants often gives much concern, as where glass houses are few it is a hard matter to find accommodation for all the plants which are liable to suffer from frost and damp during the winter. Tubers possess a great advantage over other plants in winter, for they may be stored in a very small space; in fact, many of them may be wintered without a glasshouse, and while a fine display of flowers or foliage is secured from them in summer, the expense of keeping them in winter is reduced almost to nothing.

As a rule, tubers are liable to suffer from damp in winter, and this is the first thing to guard against. Some growers are in the habit of watering tuberous-rooted plants after the foliage has quite gone, but this is a mistake, as the roots are not active then, and moisture causes them to decay. So soon as the foliage is dead watering should cease in all cases, and a dry atmosphere and a dry soil should be maintained.

Gloxinias, when in full leaf and bloom, appear as if any drying off would kill them, but few plants enjoy complete rest in winter more, and they should always be dried off. They need not be kept in the pots in which they have been growing unless there is plenty of space for them, and then do not allow the pots to stand up in the usual way, but put them on their sides under a stage or in a shed, and keep them in this position without water until February or March. So long as frost and damp are kept from the plants there is no danger of failure, but the most economical way of treating them is to turn them out of the pots and pack them in shallow boxes for the winter. A few leaves may be spread on the bottom of the box, then a layer of sand, after which the tubers should be laid in as closely as possible to each other and covered with more sand. Two or three dozen tubers may be placed in one or two boxes in this way and they will keep well. It does not matter very much where they are placed so long as they are not frosted or excited into growth prematurely by heat.

Few plants are more showy in summer than Caladiums. A dozen or two of these plants will furnish the glasshouses or embellish the dwelling room in a very pleasing manner from May until October, and yet they might all be kept in a hat box from November until March. Caladium tubers are apt to perish in winter; I have known many failures with them at this season, but that was mainly caused by the soil in which they were growing being watered too freely after the leaves had died. The amount of watering should be decreased as the leaves fade, and by the time the last of them has died, the soil should be dust dry. So soon as the foliage has died down the plants should be laid on their sides and not set upright again until it is time to restart them into growth. They will not keep well in a low temperature and it is not safe to store them where the temperature will be less than 55° or 60°. I have frequently kept them all the winter in the pots, and to economise space, I have turned them out of the receptacles, shaken every particle of soil from the tubers, and stored the latter in sand, and they all remained plump and healthy until the following spring. They may be put one on the top of another, but this is not such a good method as placing them in a single layer with the crowns facing upwards and covered with about two inches of sand.

It is often difficult to find room for tuberous-rooted Begonias in winter if they are retained in their pots, but they may be wintered admirably in sand. Choice, named varieties may be put in a single layer in a shallow box, but those which have been growing in the flower beds may be stored in boxes with dry sand between them, although great care must be taken that damp does not reach them when they are stored in this way. *James A. Paice.*

RHIPSALIS WARMINGIANA.

This delightful Cactaceous plant is ideal for pot culture. It succeeds well in an open compost containing a proportion of peat. Pots five inches or six inches in diameter are suitable, and ample drainage should be provided. The plant should be grown in a greenhouse having a minimum temperature of 55° and only shaded from the strongest sun. More water is required than is usual with Cacti, and syringing is very beneficial in bright weather.

The rather narrow, leaf-like stems have a graceful pendulous habit, and the edges are studded with small, white, star-like flowers in May. These are followed later by the conspicuous fruits which greatly resemble Black Currants, and are produced profusely, remaining on the plants many weeks and giving them a highly decorative appearance. I believe it would be a useful plant for growing in baskets, owing to its drooping habit, but I have not seen it used in that way. *T. H. Everett.*

BEGONIA GLOIRE DE LORRAINE.

Mr. Charles Hay, gardener to J. B. Body, Esq., Hindhead Court, Hindhead, Surrey, has two glasshouses filled completely with splendid specimens of these valuable winter-flowering Begonias of the Rothschild variety. Many of the plants are two feet in diameter, with twenty to thirty branches, eighteen and twenty-four inches in height, with healthy, clean foliage close down to the pots. These plants will produce a grand display during this month and January.

Mr. Hay attributes his success with these plants to selecting the correct cuttings, that is, basal cuttings secured at the end of March or in the first week of April. These are rooted in leaf-mould and sand in equal parts. When well-rooted the plants are potted singly in equal parts of loam, leaf-mould and sand. For the final potting a mixture of old, rotted cow manure, leaf-mould, best fibrous loam and a fair proportion of sand is used. I gathered from Mr. Hay that loose potting is advisable and plenty of heat, moisture and shade are essential all through the growing season in order that the plants receive no check until they have finished their growth in November. *R. H. Holton, Crawley.*

ORCHID NOTES AND GLEANINGS.

CYPRIPEDIUM MEMORIA H. S. LEON.

A flower of this noble new Cypripedium, raised between C. Perseus and C. Thompsonii, is sent by Mr. J. T. Barker, The Gardens, Bletchley Park, Bletchley. It is one of the largest and best of the large-flowered section to which it belongs. The broad, dorsal sepal bears closely-arranged, purplish-maroon lines, those in the middle forming a band extending nearly to the apex, and the lines on each side become smaller and lighter in colour towards the broad, pure white margin. The petals, which are one-and-a-half inch in width and have a glossy surface, bear dark, purplish-maroon, blotched lines on the basal half, the outer parts being tinged with the same colour; the large and well-formed lip is pale greenish-yellow, slightly tinged with brown and spotted in the inside with dark purple.

This is a very fine hybrid with distinct features which place it in the front rank of the favourite section to which it belongs. *J. O'B.*

SOME NEW COLUMBINES.

There are few more beautiful plants than the Columbine, particularly the long-spurred hybrids which have been popular garden flowers for many years. At the Central Experimental Farm, Ottawa, Canada, they have been found to be short-lived, and it was thought they might lack hardiness. This may not be the only reason, as it has been found during the past three years that large numbers of plants have been destroyed by the Aquilegia borer, a grub which eats out the whole of the crown, destroying the plant entirely.

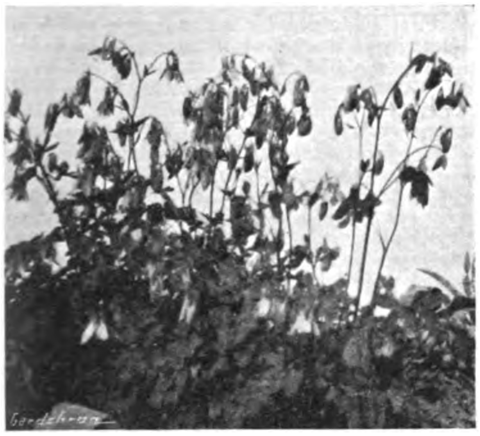
FIG. 205.—A HYBRID FROM AQUILEGIA CANADENSIS, RAISED AT THE CENTRAL EXPERIMENTAL FARM, OTTAWA.

The work of developing an early-flowering, long-spurred strain has not progressed very far, chiefly on account of the borer, which seriously damaged the few seedlings that were obtained by crossing a long-spurred hybrid with A. oxysepala. These seedlings were large, handsome plants with blue and white flowers which drooped somewhat instead of facing outwards as those of commercial strains do. A few of the second generation have been grown from these and they bloom a little earlier than ordinary strains.

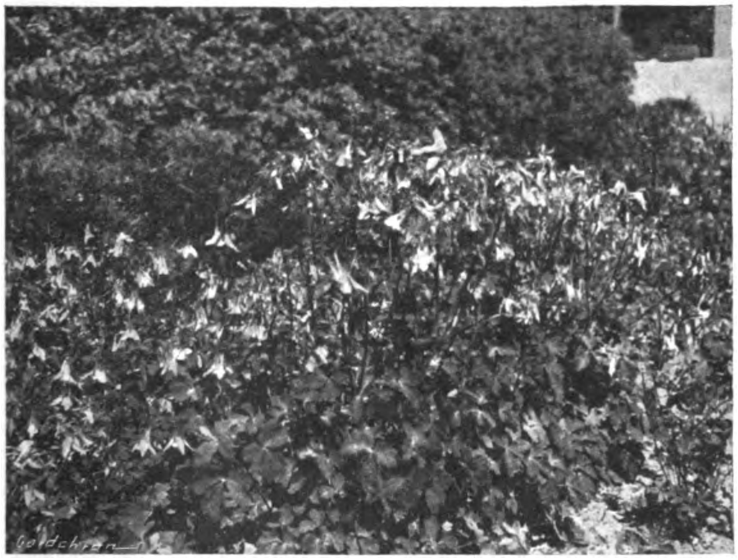
FIG. 206.—SEEDLINGS FROM THE HYBRID OF AQUILEGIA CANADENSIS ILLUSTRATED ABOVE, SHOWING THEIR FLORIFEROUS HABIT.

Further work will be carried on here in the hope of getting better results in future generations. Long-spurred hybrids do not bloom until late in June in Ottawa, and it was thought that an early-flowering strain would be desirable.

Aquilegia oxysepala is a very early-flowering species with blue, short-spurred flowers in which the petals are tipped with cream. It has been grown at the farm for a number of years and is rather dwarf in habit and chiefly desirable because of its earliness.

A. canadensis, the native Columbine or Aquilegia of the Canadian woods, is a very beautiful plant, growing about three feet high. The foliage is bright green and very ornamental. The flowers are nodding so that the spurs turn upwards. The colour is scarlet and yellow.

A cross was made at Ottawa between these two species and the result is very interesting. All the seedlings, whichever way the cross was made, are so nearly alike in habit and colour of the blooms that one hardly notices the differences. They strongly resemble A. canadensis in habit, shape of flower and height, so they have been named A. canadensis hybrids (Fig. 205). They come into flower early and they are very floriferous. The reddish-purple colour is not attractive to everyone, but when the seeds from these hybrids are sown the majority of the seedlings keep the good habit and floriferousness of their parent (Fig. 206), and give a great variety of colours, including many shades of pink and purple. These hybrids cannot compare with the fine strains with long spurs but they possess a dainty charm of their own which is very attractive in the garden, and as they bloom fully three weeks before commercial strains they lengthen the season of this beautiful flower.

Another successful cross was made between A. oxysepala and A. flabellata nana alba, the latter a dwarf plant with short-spurred, white flowers and greyish-green leaves. The seedlings of this cross are not tall and they vary in leafage, some seedlings showing distinctly the greyish colour of A. flabellata. The flowers are large, nodding, and the petals short-spurred, broad and bright violet-blue, edged with cream (Fig. 207;. The sepals are blue also so that the whole flower is very attractive. In the second generation quite a number come true to colour, which is not surprising as one could not expect any range of colours from this cross. These have been called short-spurred blue hybrids.

A. canadensis crossed with A. flabellata nana alba gives very uninteresting seedlings with small, purplish flowers of poor shape. Possibly some good plants may show up in future generations. *Isabella Preston, Specialist in Ornamental Gardening, Central Experimental Farm, Ottawa, Canada.*

HARDY FLOWER BORDER.

ACONITUM WILSONII.

Wilson's Monkshood is a September-flowering plant which has fully justified its inclusion in a border of select hardy plants. It has been claimed for it that it is the most magnificent of the race and there are, I think, few who dispute this. It has now been sufficiently long in cultivation to enable its value to be appreciated; and no one can gainsay its beauty in a border or the wild garden for its stature gives it a commanding appearance in either.

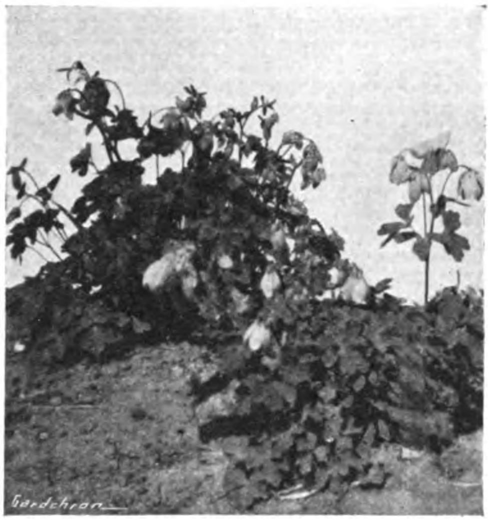
FIG. 207.—SHORT-SPURRED, BLUE, HYBRID AQUILEGIAS RAISED AT OTTAWA.

Of erect growth, it reaches to a height of six feet or more, and above its bold, dark green foliage it bears noble spikes of violet blooms that are large individually and arranged on a spike of commanding beauty.

A. Wilsonii is now plentiful in commerce and is so moderate in price that is should find a place in every garden where there is sufficient space for bold border flowers. *S. Arnott.*

CIMICIFUGA SIMPLEX.

This elegant October-flowering plant is a most valuable addition to the herbaceous border. It attains to a height of three feet and produces its tiny white flowers on short pedicels, forming slightly nodding racemes, three or four inches in length, which are carried well above the handsome triternate foliage.

Cimicifuga simplex is of easy cultivation, and may be lifted and divided with ease, although the best results are obtained from established plants. *T. H. Everett.*

CAMPANULA PERSICIFOLIA.

The Peach-leaved Campanula in its many beautiful varieties is a fine border plant and worthy of inclusion in all gardens. Bold clumps of separate colours give a fine effect when in bloom.

Verdun, a variety of recent introduction, develops stout flower scapes that are well furnished with semi-double, pale lavender flowers from May to the end of August. The rigid flower stems are two feet to three feet tall, and the effect produced when the plant is massed is most pleasing. Fleur de Neige has large, snow-white, semi-double flowers and is an admirable companion to the former as it grows to the same height. Telham Beauty is undoubtedly the largest of the single-flowering varieties and one of the most beautiful of all. The flowers are of good shape, exceedingly large and of a delicate lavender blue.

These Campanulas should be planted in rich soil in a sunny position and given liberal supplies of water during times of drought. All three varieties make excellent pot plants for the cool conservatory. *W. Logan.*

Habrolepis dalmanni, of which several consignments have been received at the Cawthron Institute from Dr. Howard. A large number of females were reared from the last consignment, and, if it turns out that this species is parthenogenetic, there will be a very good chance of establishing it and so checking the scale.

(5). CONTROL OF INTRODUCED APHIDS IN GENERAL.—Only one or two very rare native species of aphids are known in New Zealand, but there are considerable numbers of injurious introduced species. One of the most curious gaps in the New Zealand insect fauna is the complete absence of the Green Lacewings or Chrysopidae, which are such a valuable check on aphids in other parts of the world. An attempt is, therefore, being made by the Cawthron Institute to acclimatise these insects in New Zealand. A fine consignment of 1,900 hibernating adults of an undetermined Canadian species has been received in excellent condition, through the kind offices of Mr. Gibson, the Dominion Entomologist of Canada and Mr. Downes, the State Entomologist of British Columbia. Three generations have already been reared and a fair number have managed to survive the rather too warm winter of Nelson.

(6). CONTROL OF PEAR SLUG (larva of Eriocampoides limacina).—This pest is bad on Pear, Quince, Plum, Cherry and Hawthorn throughout New Zealand and Tasmania, and in parts of Australia. An attempt was made to introduce from England the ichneumon parasites of the genus Perilissus. Consignments were sent to the Cawthron Institute from Rothamsted Experimental Station Nearly two years elapsed before the insects hatched out. They were then carefully paired in special cages and liberated into an insectary containing plenty of Pear slug, which they attacked with vigour. It seemed almost certain at that point that success would be attained. But alas! one of the unknown bionomic factors intervened, for the entire succeeding brood proved to be males, and so the race died out. This extraordinary instance of the difficulties attending this kind of research may fittingly be used as an extra argument in favour of giving the strongest encouragment to those engaged in pure entomological research. Until we know for certain the factors governing the production of single sex broods in Hymenoptera, and also far more about parthenogenesis in this Order than we do at present, we may not be able to succeed with the introduction of many valuable parasitic insects into Australia and New Zealand.

(7).—CONTROL OF SHEEP-MAGGOT FLIES.—This immense problem, of the utmost importance to Australia and other sheep-raising countries, need not be dealt with at all fully here, because up to the present no satisfactory method of biological control has been discovered. Much work has been done with several well-known Chalcidoid parasites of the Blow-fly larvae and pupae, but in no case has the percentage of parasitism produced been high enough to warrant the continuance of the work. At the present time, the interesting parasitic Hymenopteron Alysia manducator is being collected in England by Dr. J. G. Myers for shipment to Australia, and it will be interesting to watch the progress of the attempt to acclimatise and spread this very active insect.

(8). CONTROL OF COCO-NUT MOTH (Levuana iridescens).—This very serious pest, whose original home is still unknown, is a small Zygaenid moth whose larva feeds along the midrib of the leaflets of the Coco-nut Palm. In the island of Viti Levu, Fiji, it has increased enormously during the past ten or twenty years, until its depredations has so weakened the trees and reduced the yield of copra that the very foundations of the industry are tottering. During the past few years scientists have been engaged on the problem of discovering and introducing the natural enemies of species closely allied to Levuana iridescens from Malaya. A parasitic Tachinid (Ptychomyia remota) has been introdued and successfully established with very promising results.

(To be continued.)

PUBLIC PARKS AND GARDENS.

THE Harrogate Corporation has purchased from the Earl of Harewood sixty-seven acres of land, including a nursery with extensive glasshouses, and takes possession on January 1, next. The new property, part of which is beautifully wooded, will be open to the public to roam in at will, the nursery and glasshouses being reserved for the propagation of trees, shrubs and plants. On the north side of the town fifteen acres of recently acquired land is to be laid out as a recreation ground, which will include tennis courts, bowling greens, football and cricket ground, putting green and children's playground.

VISITORS to Golders' Hill Park, to the north of Hampstead Heath, are disappointed at the demolition of the small greenhouse to which in the past free access has been allowed, the sole condition being that the door must be closed on entering and leaving. The little structure was bright with flowers all the year round, and fragrant in the spring with the scent of a beautiful Mimosa (Acacia) which covered the glass roof. Unfortunately, there were a few visitors who did not appreciate the privilege afforded to them, and even some cases of theft of flowers, so that when the timbers of the house were found to be rotting, thus rendering the structure unsafe, the L.C.C. Parks Department decided to remove it altogether. Possibly it may be rebuilt in another part of the park, though it is doubtful whether there will be free access as in the past.

COL. FFENNEL, of Wytham Abbey, has offered the city of Oxford forty acres of land at Botley for a public park.

RUISLIP-NORTHWOOD Urban District Council has resolved to make application to the Ministry of Health for sanction to borrow £800 for developing a children's section at the pleasure ground.

THE Town Planning Committee of the Heston-Isleworth Urban District Council reported at the last meeting of the Council that the County Council would contribute £2,606 towards the cost of acquiring land at Lampton Road, Hounslow, for a recreation ground.

THE Ministry of Health has sanctioned a loan of £3,750 required by Preston Town Council for laying out Smith's recreation ground.

FRUIT REGISTER.

PLUM TRANSPARENT GAGE.

ALL who grow this delicious Plum, which is illustrated in Fig. 210, will agree with Mr. E. A. Bunyard in his statement in *A Handbook of Fruits* that it is the best of all the Gages.

The name Reine Claude Diaphane was given by the raiser, a Mr. Lafay, a Rose-grower at Bellevue, Paris, who obtained it from a seed of Reine Claude. Mr. Thomas Rivers was shown the Plum when visiting Mr. Lafay in 1836, and we believe that Mr. Rivers introduced it to this country. In view of its fine quality with us, it is surprising to learn that it does not do so well in America as some of the American bred varieties of the Reine Claude group, but this is no exception, for many of our best fruits are but little esteemed in the United States, while some of their choicest varieties are practically a failure with us.

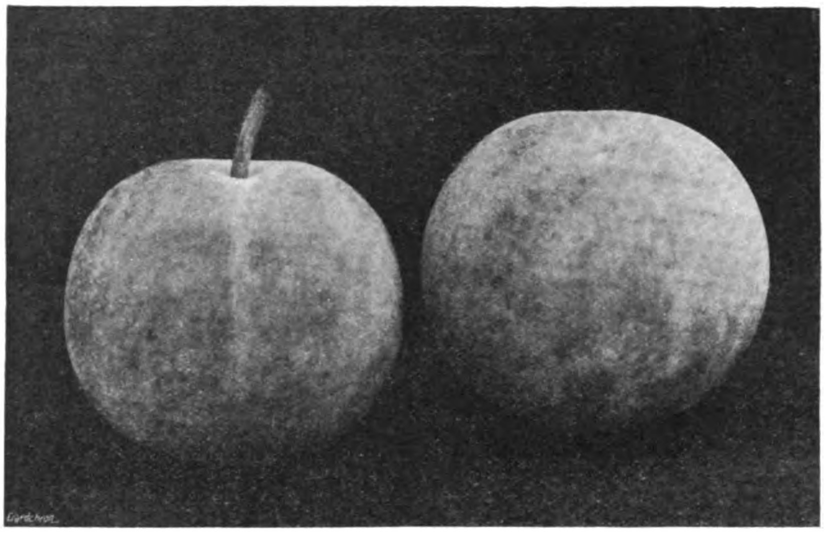

FIG. 210.—PLUM TRANSPARENT GAGE.

The transparency of the skin of this Plum is an outstanding character, and if a fruit is held up to the light the outline of the stone may be seen. The skin is greenish-yellow, dotted and marbled with red and covered with a very high bloom. The flesh is very juicy, of rich flavour, and has the merit of separating freely from the stone. It is ripe in the beginning of September. The tree is a vigorous grower and forms a rounded head; it is moderately fruitful. According to the *Plums of New York*, the flower buds of this variety have a remarkable tendency of producing leaves in the place of floral organs in American gardens.

APPLE LONDON PIPPIN.

THIS Apple is a free-grower and a prodigious cropper, succeeding admirably as an orchard standard or as a pyramid.

The fruit is round, smooth, yellow when ripe, with a few faint dots; it is excellent for culinary purposes and not to be despised for table use when thoroughly matured. It will keep in good condition until February or March. London Pippin is worthy of extended cultivation, particularly as an orchard tree; it flowers rather late, thus often escaping the spring frosts. Trees quickly come into bearing. *Ralph E. Arnold.*

PEAR THOMPSON.

I SEE that this fine Pear is given by both our authorities upon the nomenclature of fruits —Dr. Hogg and Mr. E. A. Bunyard—as Thompson's, and most of the writers in the horticultural press also use the possessive case, including the R.H.S. schedule, but is it correct? I have always understood that a fruit raised by a certain person and given his name should be written with an apostrophe s, but as this Pear was raised by Van Mons and named by Mr. Sabine, a secretary of the R.H.S. in honour of Mr. Robert Thompson, I think, therefore, that it should be written "Thompson." There have been fruits and a Rose named lately after the popular President of the R.H.S., but I have not as yet seen these catalogued as Lord Lambourne's. *A. H. Pearson, Lowdham.*

APPLE LAXTON'S SUPERB.

I had the pleasure of tasting this Apple recently, and congratulate the raisers in producing a variety equal in flavour to Cox's Orange Pippin, but being self-fertile and free from those diseases which the latter is so liable to, is superior as a cropper or a market variety.

If it is a case of growing one or the other sort, I feel sure it would be Superb, but where Cox's Orange Pippin is a success there is room for both, as Superb is later and would come in after Cox's Orange Pippin is over. This seems a very bad year for the latter variety as the fruits seem very scarce and difficult to purchase in this locality which is never a good one for Cox's Orange Pippin. The crop this year was a complete failure, yet Superb is carrying a full crop. In the case of a horse, it costs no more to keep a good one than a bad one; so with Apples. Where Cox's Orange Pippin is a failure, why not grow Laxton's Superb? *G. D.*

——I consider this Apple one of the very best varieties of recent introduction, and predict that in the near future it will become as popular in its season as Cox's Orange Pippin. It ripens after the latter is over.

The fruits are of a suitable size for dessert, are prettily shaped and of excellent quality. The growth is sturdy and the fruits abundantly produced on the bush. I have had no experience with this variety as a standard. I strongly recommend this Apple to growers who intend planting fresh trees this autumn. *H. Markham.*

APPLE JOY BELLS.

The merits of this new dessert Apple, which received the R.H.S. Award of Merit on November 14, 1922, and was illustrated in *Gard. Chron.*, December 18, 1920, p. 303, fully entitles it to a place in a collection; indeed, I consider it one of the finest flavoured Apples of recent introduction. The fruit is somewhat large for the dessert table, for which reason it might be advisable to grow the variety as a standard.

The skin is almost wholly covered with red, the yellow only showing through on the shaded sided, and there is a considerable amount of russet marking at the stalk end. The eye is closed, within prominent ridges; the stalk is short and set in a wide, conical cavity. The flesh is tender, whitish, and of very fine flavour. The tree crops abundantly and is a robust grower. The variety is at its best in November and early December. It was raised by Mr. Will Tayler, Godalming. *T.*

HARDY FRUIT GARDEN.

PLANTING APPLES IN GRASS LAND.

The increasing demand for Apples as an article of food, and the booming of imported fruit, call aloud for reconstruction in our methods of cultivation, especially in respect of small orchards. The skilled market grower has already set the pace and provided object lessons to the observant, yet in too many cases good trees are sacrificed, or their fruitfulness retarded, by unskilful methods of planting.

The writer inspected a small orchard recently which was making little or no progress, and was asked what was amiss with it. The reply, briefly, was, "starvation; the trees have no food and are not in a position to obtain any." The owner was greatly surprised, and observed, "I thought you simply planted the trees and they looked after themselves."

After a little enquiry, the facts transpired. A number of standard trees had been bought and the planting done by an unskilled man. The turf was notched and turned back, and a hole made sufficiently large to enable the roots to be crammed in, when they were covered with soil and the turf returned in its original place. Clearly this is the wrong way to plant, and it is not surprising that three years had passed by leaving the trees very much in the same condition as when purchased.

A more recent inspection was a case where good trees had been planted on a hopeless site—nothing less than a mild form of bog land. Some of the trees even then, the first week in November, were standing in water.

The choice of site is all important, and should be the first consideration, the ideal site of course, being well-drained land sheltered, if possible, on the north and east sides. If sloping towards the south or south-west, so much the better, but by natural or artificial methods good drainage must be assured. The next business must be conducted with a spade, and the soil and subsoil examined at various points. A good indication of the suitability of the soil is the growth of the common Hawthorn, for where this is growing freely and fruiting well, Apples usually do likewise.

The point to remember in planting in grassland is that however loamy and friable the soil may appear, so far as fruit-growing is concerned, it is uncultivated soil. The site being approved, it is well to mark out the stations for the trees with stakes, making the best arrangement possible as regards the sunlight. The stakes should be at least twenty feet apart each way, and if planting in a square, they should be sighted from each angle, and arranged to form a line from whichever point the trees may be viewed.

The time for this work should be early autumn, and the holes dug in advance so that the soil may have the benefit of exposure to the weather in the interval before planting.

When the stake is firmly placed where the centre of the hole will be, a piece of string eighteen inches long, with a peg attached, provides an accurate and easy method of marking the holes three feet in diameter which are to receive the trees. The turf should then be stripped and laid on one side and the top spit on the other side, carefully reserving this for after use. Much depends upon the nature of the subsoil, but on ordinary sites, the soil should be dug eighteen inches deep. Below this, if the subsoil is of a retentive character, break it up another spit deep to provide free drainage, but do not bring this soil to the surface. If natural drainage is deficient, a layer of broken bricks and old mortar rubble may be used with advantage. Then take the turf and lay it grass downwards in the pit and tread firmly, afterwards adding a thin layer of soil to form a bed for the roots of the tree.

When the tree is placed in position, it will be greatly helped if a barrow-load of good soil from a compost heap, to which has been added some wood-ash, can be obtained to cover the roots. Before doing so, place the supporting stake in position, and see that it is long enough to go right through the turf and also reach up to the head of the tree. Staking is all important and is much easier done at this point, and this prevents any damage to the roots. The latter should be spread out evenly and the fine soil worked in gradually, always endeavouring to bring the small, fibrous roots as near the surface as possible; make the whole firm by treading after the roots have been well covered. If the soil is at all dry, a good watering at this stage is desirable, and afterwards the filling in can be completed.

One important item remains for the lack of which many good trees are ruined—that of securing the tree to the stake, which should reach right to the tree head, but not beyond. See that the stake is free from knots and any roughness wherever it comes into contact with the bark of the trees; next take a piece of felt or other soft material to make a band for the stem as near the head as possible. Tar cord, fairly stout, is the ideal material for tying. Take a piece sufficiently long, double it and pass it around the band in a noose, securing it firmly to the stem; next, taking an end in each hand, pass the cord several times around the stake and tie firmly. The soft material will allow sufficient expansion for the growth of the tree, but it should be carefully examined at intervals, especially after windy weather.

The best time for planting is, of course, the autumn, but if for any reason it cannot be done then, the work should be completed by the end of February. All that then remains to be done is to shorten the growths in the spring, always cutting to an outside bud so as to ensure the spreading character of the tree. A good mulching of any ordinary farmyard manure should be given before dry weather sets in, as this will materially increase the number of those fibrous roots which are such an important factor in the making of a fruitful tree.

The varieties of Apples which it is desirable to plant must necessarily vary according to districts, and it is well to obtain information from reliable local growers before finally deciding upon the sorts to plant. There are, however, a number of well-known varieties which may be depended upon, and these should form the basis of every selection. From a commercial point of view, there is no doubt we have too many September Apples. I would therefore stress the point that the first choice of varieties should include Newton Wonder, Annie Elizabeth, Bramley's Seedling, and its crimson form, King Edward VII, Lane's Prince Albert, Northern Greening and Sturmer Pippin, most of which will keep in good condition till May or June. Allington Pippin should be included, with Bismarck, Cellini, Emneth Early, James Grieve, Golden Spire and Stirling Castle for their free bearing qualities, while such dessert kinds as Mr. Gladstone, Irish Peach, Beauty of Bath, Ellison's Orange, St. Cecilia (in place of Cox's Orange Pippin, where this will not succeed), Blenheim Pippin, King of the Pippins, Charles Ross and William Crump will carry over a fairly long season. Mère de Menage is a very hardy, free-bearing Apple, serving the household well, as its name implies, till the end of March, and it makes a good orchard tree.

The well-known Worcester Pearmain should always be included for its free pollen-bearing qualities, and placed as near neighbour to the self-sterile kinds, while for the same reason a tree or two of the ornamental Siberian Crab should be planted on the windward side, serving the dual purpose of affording shelter and ensuring fertility. *J.*

VEGETABLE GARDEN.

BRUSSELS SPROUTS.

This vegetable, which is one of the most useful of the Brassica family, is often badly cultivated. For instance, one finds plants of enormous size with very coarse growth, often producing only soft, and almost useless, open sprouts, this generally being the outcome of the plants having been grown in very loose ground. In the same locality one may notice undersized, weakly specimens of the same variety producing sprouts far below the normal size and quality. In this case poverty of soil is generally the trouble.

To cultivate the Brussels Sprout to perfection a long growing season is needed, and I advocate sowing the seeds in a cold frame towards the end of February for the earliest supply, and on a well-prepared seed-bed, on a sheltered, sunny border during March, and until very early April for successional cropping. The seeds should be sown thinly, and in both cases (with the exception of the latest sowing), the young plants, so soon as they are large enough, should be pricked out, about four inches apart each way, into other frames, and nursery beds, thus ensuring strong, sturdy plants, in readiness for transplanting to their final positions about the second week in May and onwards. The site for the final planting should be open, and for choice of soil select a retentive loam.

The ground should be prepared as early in the season as possible, by deep digging or trenching, adding, as the work proceeds, a fair amount of well-rotted manure, more or less, according to the condition of the soil. When the digging is finished, a dressing of lime or basic slag strewn over the surface will prove beneficial, especially if applied during the winter. Nothing further need be done until a short time before planting time arrives, when a dressing of soot, superphosphate and burnt refuse may be strewn over the surface and either raked or lightly forked in. While the soil is dry, tread it very firmly and rake the surface level.

Before lifting the seedlings for planting the roots, if dry, should be watered liberally. Lift them carefully with a trowel or handfork, and make them very firm in the ground with as little disturbance as possible. Strong-growing varieties should be allowed three feet apart each way, setting them alternately in the rows. For smaller-growing varieties a distance of thirty inches will suffice. Should the weather be very dry, a liberal watering will be necessary.

When established, nothing promotes better growth than the free use of the Dutch hoe.

Excellent Brussels Sprouts may also be grown in succession to Celery, Peas, Beans, etc., in fact, in any soil that is in good heart.

Good varieties are Exhibition, The Wroxton, Matchless, Market Favourite, Dwarf Gem and Aigburth Improved.

The present season, which has been a very wet one in this locality, has caused Brussels Sprouts to grow very quickly, in common with all other Brassicas. *R. H. Crockford, Horsley Hall Gardens, Gresford, N. Wales.*

GROUNDWORK.

At this season of the year, and especially if the weather continues open, every effort should be made to complete all groundwork; where time and labour permit, as much as possible of the vegetable quarters should be trenched.

Good cultivators know the value of trenching and its benefit is more especially noticeable in hot, dry summers. Time expended on deep cultivation of the soil now will be amply repaid, not only in finer crops and increased production, but also in the less work involved in watering, mulching, etc. In bastard trenching, the bottom soil is not brought to the surface, therefore it is not so thorough as trenching proper. It is, however, superior to ordinary digging, and ensures better drainage of the soil, also a deeper root-run for such crops that require it. All soils, of whatever nature, are greatly improved by the action of frost and snow, and more particularly those of a heavy texture.

In trenching proper, the soil is moved three spits deep, say from three-and-a-half to four feet, and much garden refuse that is usually wheeled away and destroyed may be made use of. First, make a trench at one end of the ground and wheel the soil excavated to the other end. Shovel out the loose soil and then take out a second spit and wheel the soil away as before. The third spit should now be dug, incorporating with it such garden refuse as Cauliflower stalks, old Pea haulm, road scrapings and old mulching material. If the soil is very heavy, rough strawy litter and leaves will be very beneficial in keeping its texture open. Next mark out the second trench the same width as the first, and turn this spit into the first, also shovel out the loose crumbs of soil and place some good, well-rotted manure on it before forking it in. The second spit should then be dug and placed on this, and finished off with the loose soil from the bottom. The bottom spit should then be dug and treated as in the first case, the next trench marked out, and the soil turned into the bottom of the second, and so on, until the work is completed.

It is advantageous to leave the surface of the soil as rough in winter as possible and, if of a heavy nature, it should be left in ridges to allow frost to penetrate. Heavy surface soil is greatly benefited by applying a top-dressing of old hot-bed manure, wood-ash and soot or lime, and if these are applied during frosty weather they may be well mixed with the soil when the plot is dug over and made level in the spring. *R. W. Thatcher, Carlton Park Gardens, Market Harborough.*

HOME CORRESPONDENCE.

Vine and Peach Mildews.—With reference to my note on Vine Mildew in *Gard. Chron.*, November 28, 1925, p. 432, the same treatment was carried out this year as was outlined in the previous article, and it is gratifying to report that mildew has not been present on any of the vines here this year. On the strength of the experience gained with vines, the same process was carried out this past season on two Peach trees growing in the cool end of a house, the varieties being Royal George and Noblesse. These two trees have been infected with mildew more or less for a number of years, mainly on account of their position and their susceptibility to attack. Previous to this season, sulphur was always applied at the first sign of the outbreak, which was usually when the young growths were about one-and-a-half to two inches in length, but this was never really effective. This year green sulphur was dusted lightly on the tree before the flowers expanded, again directly the fruits were set, and periodically until the end of the stoning period, when it was discontinued to allow time for any sulphur deposited on the fruits to be removed by syringing before ripening was completed. Syringing was not done until after the sulphuring was discontinued. Mildew has not appeared on either tree this season. An interesting point is that a very slight outbreak of mildew occurred on an adjoining tree of Cardinal Nectarine on the edge of the side nearest a tree of Royal George. This tree has not been treated with sulphur. It is questionable if very early and late dustings were necessary, but it is essential to have the sulphur on the foliage long before the date the attack usually occurs. *J. Wilson, Wisley.*

Slugs and King Edward Potatos.—With reference to your Correspondent's remarks re slugs and King Edward Potatos, it is an easy matter to reduce the number of the pests by liming the land before planting, or giving a dressing of superphosphate of lime and kainit, which is equally effective. In gardens infested by slugs, before sowing Lettuce seeds or any subject likely to be eaten off when the seedlings appear, I have found a light dressing of superphosphate raked into the soil before drawing the drills thoroughly effective, but the dressing must not be overdone. I recollect dressing a north border with superphosphate before sowing Spinach; after giving sufficient I had some left over in the bucket and thought there would be no harm in throwing it on along with the rest as there was not very much, but not a single seed germinated! I know the seed was good, as shown by the results of previous and subsequent sowings. I have often gone out with a trugful of air-slaked lime about ten o'clock on a mild, calm night in spring, when small seedlings were coming up, and scattered the lime all over them; it kills every slug it touches and does no harm to the plants. Unfortunately, I have found friends killed by it also—toads and frogs—but one cannot discriminate in the dark. After dressing a bed of spring Cabbages one night I found sixteen dead slugs around one plant. I believe, in regard to Potatos, that wireworms and snake millipedes are often the culprits and slugs get blamed. When storing seed Potatos where it is difficult to keep rats and mice away, I find they always eat May Queen in preference to any other variety. *Grigor Roy, Stoke D'Abernon Manor Gardens, Cobham.*

Die-back Disease of Gooseberries.—I was interested in Somerset's article (page 434) on the die-back disease of Gooseberries. I have been gardening for a good many years in both England and Scotland and never saw so much die-back in Gooseberries and Currants anywhere as I did while living in Somerset. I attributed the trouble to the moist climate and badly-drained condition of the land. No one thought of draining or cleaning out ditches to let water away. In a spell of rainy weather the soil was always waterlogged. Many of the fields round where I was living were in the same condition as they were a hundred years ago; one could see the old surface drains grassed over—which was the mode of draining at that time—and all over the field there would be a huge anthill in about every ten square yards. The most robust thing I saw growing there was the common Nettle, which overtopped the tallest man on the estate. *Grigor Roy.*

Failure of Celery.—It would be interesting to know whether a complete failure as annoying as it is curious which has occurred with the Celery in my garden has its counterpart in other gardens. The crop in question does not look unhealthy. The leaves are somewhat spotted, evidently as the result of attack by a fungus, but the amount of leaf damage does not appear to be excessive. All that has happened is that the leaf-stalks ceased to grow fairly early in the season and have made no growth since, with the result that the plants provide scarcely any heart or stalk. The root system, as judged by lifted plants, is well-developed, and there is no evident sign of disease, either in the roots or stems. The leaves, owing to the failure of the stalks to grow, lie almost flat on the ground. It would seem that the failure must be due to attack by a fungus, and if that be so, it would be interesting to know the name of the offending fungus, which appears to have done nothing beyond putting a veto on the growth of the plants. *F. K.*

Planting Trees and Shrubs.—In Mr. Gardner's interesting article on the planting of trees and shrubs, in *Gard Chron.*, November 6, page 372, correspondence is invited on the question of planting with the roots still encased in the sacking, as received from the nursery. The wisdom of carefully spreading out the roots and working in prepared soil when planting would appear to be beyond question, but experience has proved that in many cases small shrubs, planted with the ball of soil and roots encased in canvas, have grown just as well. Mention may be made of a case in point. Last December, a small collection of shrubs was planted here, among which were a few plants of Viburnum Carlesii, the roots of which had been carefully sewn up in sacking at the nursery, and were planted when received, bags and all. Recently it was decided to transfer these shrubs to another position, and on lifting them, it was found that roots had pushed out through the sacking in all directions. Nor is this an isolated instance. Too much importance cannot be attached to the after treatment of newly-planted shrubs, at least, for the first year after planting; mulching the plants with half-decayed leaves, careful attention to watering in spring and summer, and, in the case of evergreen subjects, frequent syringing with water, are necessary, while not less important is careful staking, to which attention has already been drawn. *John Boxall.*

Bolting in Cabbages (*see* p. 396).—The reason of Brassicas bolting is attributable to more than one cause, viz., over manuring with farmyard or pig manure, over-enriching the land with nitrogenous foods, sowing the seeds too early, and planting on loose, spongy soils. The finest, earliest, and best ten acres of Cabbages I ever saw were planted after a Potato crop had been cleared from the land which was dressed with about five cwts. of fowl and pigeon manure. The ground was ploughed five inches deep and the surface rolled thoroughly before planting, the result being a perfect crop. The variety in question was a select stock of Flower of Spring. The late Mr. Richard Gilbert, for years gardener at Burleigh Park, Stamford, told me many years ago, to plant Cabbages, Broccoli and Brussels Sprouts by means of an iron bar, as this method ensured sturdy growth, enabling the plants to withstand severe weather, whilst it curtailed bolting to a very low percentage. Select sturdy plants from the seed-bed and discard the very strong and lanky specimens. Sowing too early often militates against the success of the crop, whilst aspect has also a bearing on results. During my long experience, after trying many varieties of Cabbage, the following are, to my mind, worthy of growing: Flower of Spring, Mein's No. 1, and a select stock of Ellam's Dwarf Early. *G. L.*

SOCIETIES.

AYR CHRYSANTHEMUM.

The twentieth annual exhibition of the Ayr Chrysanthemum Society was held on Wednesday, November 17, when the number of entries indicated a material advance on that of last year.

An outstanding feature was the display of pot plants. Mr. GEORGE McCARTNEY, Orangefield, Monkton, excelled in the gardeners' classes. He won the Pollock Cup for two Chrysanthemum plants with massive examples of White Thorpe and Lady Hanham, the former plant carrying ninety-five flowers. He also excelled in the single pot classes for incurved and single varieties with Yellow Thorpe and Florrie Kerr, and in addition to winning a Rose Bowl for three vases of single blooms, he staged the best three pots of Begonia Gloire de Lorraine. Mr. ROBERT CLARK, Racecourse, Ayr, had three first prizes to his credit.

The competition for the Land of Burns Cup for four vases of Chrysanthemums attracted the largest entry in the cut flower section. The issue lay between Mr. JAMES BLACKSTOCK, Motherwell, and Mr. R. ALLAN, Whiting Bay, Arran, and was decided in favour of the former. The winner was also successful in winning another Cup for two vases of Japanese Chrysanthemums in the amateurs' division.

Mr. ALLAN was compensated, however, for his defeat, for he won in all the single vase classes in the open competition with well-grown blooms of W. Turner (white), Mrs. R. C. Pulling (yellow), Mrs. George Monro (crimson), and Mona Davis (pink). The prize in the large class for twelve blooms was added to his list of honours, as well as a Gold Medal awarded to a vase of Japanese Incurved blooms which was selected as the best in the show. His best varieties were: Francis Rowe, Mrs. Luxford, T. W. Pockett, Mrs. R. C. Pulling and Mrs. Algernon Davies.

In the class for twelve blooms, confined to Ayrshire, which carried with it a Silver Cup, the winner was Mr. DAVID AIRDRIE, Dunlop House, and in the amateurs' section, Mr. A. JAMIE was placed first in five classes.

Mr. AIRDRIE had many successes in the fruit section, for he excelled in the classes for black Grapes, white Grapes, dessert Apples, and baking Apples. With ten wins to his credit Mr. A. J. DUNLOP, Galston, was the most successful amateur exhibitor in the fruit and vegetable sections.

Other prize winners were: Mr. W. CHORLEY, Irvine; Mr. W. RAE, Ayr; Mr. CARNEGIE, Belmont; Mr. CHARLES ROSS, Tarbolton; Mr. J. McILWRAITH, Beith; Mr. WILLIAM ZOAN, Huilford; Mr. JOHN S. COWAN, Doonholm; Mr. STRATHDAE, Ayr; Mr. H. S. KERR, Mr. W. S. MUIR, Mr. W. NICOL and Mr. P. DUNCAN, Ayr; Mr. JAMES DICK, Kilmarnock; Mr. J. HAY, Tarbolton; and Mr. A. HARVIE, Alloway.

The trade were represented by Messrs. LEARMONT, HUNTER AND KING, Messrs. McGILL AND SMITH, Mr. WILLIAM RAE, and Messrs. WILLIAM MARSHALL AND CO. The exhibits of the last-named firm included Chrysanthemum Yellow Favourite, a meritorious sport which appeared among Favourite two years ago.

CHAMBER OF HORTICULTURE.

The seventh annual meeting of the Chamber of Horticulture was held on November 23, at 18, Bedford Square, W.C.2. The President, Mr. Alfred W. White, occupied the chair. Others present included Messrs. Geo. Monro, W. E. Wallace, H. Curtis. P. C. Kay, G. H. Barr, W. R. Oldham, H. J. Jones, F. W. Alesworth for J. S. Brunton, C. G. L. Du Cann, and the Secretary.

The annual report and balance sheet were submitted and adopted.

In his address, the President referred to the secession of the fruit and vegetable organisations and that in consequence the proposition was that the Chamber should close down as a separate organisation and amalgamate its interests with the Horticultural Trades Association. A scheme of operation had been accepted in principle by which the Horticultural Trades Association had been asked to undertake the co-ordination and national organisation work of the industry (fruit and vegetable producers' interests excepted). Co-operation with the National Farmers' Union would, no doubt, be readily accorded.

The development of the industry's organisation in recent years had been rapid, and the Chamber had certainly been a large factor in this development. Useful work had been accomplished as is shown in the various annual reports and by the support given for so many years by other national organisations.

Mr. George Monro considered the results had proved the worth of all the work put in by the Chamber. When the Chamber was inaugurated, sectional interests were only partly organised. These interests developed their organisations, and the time had now passed for the maintenance of a separate co-ordinating body. Turning over affairs to the H.T.A., merely carried out the original idea that there should be one body for all sections, and he thought that with the H.T.A. sectional interests would be brought even closer together than was the case with the Chamber. He felt the H.T.A. was undertaking a great responsibility but was capable of the effort.

The scheme of operation referred to by the Chairman is proposed as a tentative one, and if found to work well in practice, rules will be drafted to embody it after a period of trial, together with such modifications or additions as practicable application shows to be necessary. It provides for one National Association only for the organisation of producers of trees, shrubs, plants, flowers, seeds, bulbs and kindred and allied trades connected with the industry, and that in order to give effect to this the Horticultural Trades Association will extend its scope by the formation of Executive Committees for the added interests. These new Committees to be appointed by members attached to each particular sectional interest will have adequate representation on the governing body; the subscription of members to be on the present H.T.A. basis; while it is understood that the costs involved by the adoption of the scheme are to be met entirely by subscriptions to the proposed extensions. These Committees will be autonomous, *i.e.*, self-governing, and would regulate the admission or non-admission of members to their particular section. No reports will be sent forward except at their own instance. Provision is made for a General Co-ordinating Committee, and for the admission of affiliated associations. The date of commencement proposed is January 1, 1927.

The meeting unanimously passed the following resolutions:—

> That the proposals circulated for the incorporation of the interests of the Chamber of Horticulture with the Horticultural Trades Association be accepted, and that the Horticultural Trades Association be requested to undertake the co-ordination and national organisation of commercial interests in horticulture (fruit and vegetable interests excepted).
>
> That the Chamber of Horticulture be voluntarily wound up and that the requisite statutory meetings be called together to give effect to this resolution.
>
> That the Finance Committee be instructed to examine the financial position of the Chamber and to make such recommendations and arrangements for the payment of liabilities as is thought fit.
>
> That the gentlemen at present occupying the offices of President, Vice-President, Hon. Treasurer, and as members of the various committees, be asked kindly to retain those offices until the date of the statutory winding-up meetings.

Messrs. George Cobley, Kay and Co. were again elected auditors.

The meeting concluded with a vote of thanks to Mr. White for the work he had done on behalf of the horticultural organisation.

CORBRIDGE-ON-TYNE AND DISTRICT GARDENERS'.

The twenty-third Chrysanthemum exhibition of the above Society was held in the Town Hall, Corbridge, on November 20. The profits of the show are given to the local cottage hospital. and during the period of the Society's existence the hospital has benefited to the extent of £600, It was the finest exhibition of its kind in the north-east counties held since 1914. Not only were the Chrysanthemum and vegetable classes well contested, but the quality of the exhibits was excellent.

In the cut flower classes for twelve Japanese Chrysanthemums, the DOWAGER LADY ALLINDALE (gr. Mr. J. Thomas), Bywell Hall, was first, showing excellent blooms of Mrs. R. C. Pulling, Mrs. A. Davis, W. Turner and T. W. Pockett; J. T. DOVE, Esq. (gr. Mr. L. Sharp), followed closely. In the class for three vases of Japanese Chrysanthemums in three varieties, J. C. STRAKER, Esq. (gr. Mr. G. Hay), Stagshaw House, was placed first with fine blooms of R. C. Pulling, Mrs. A. Davis and L. Pockett; second, LADY ALLINDALE; third, J. T. DOVE, Esq.

In the class for six Japanese Chrysanthemums in not fewer than three varieties, A. NICHOLLS, Esq. (gr. Mr. Mackintosh), Stocksfield, won the premier award; LADY RAYLEIGH (gr. Mr. E. Maclaren), Beaufront Castle, being placed second; third, Mrs. LAING (gr. Mr. T. Cartmail), Fernley Grange.

LADY ALLINDALE excelled in the class for three white Japanese varieties; she showed fine examples of L. Pockett; second, A. NICHOLLS, Esq.; third, LADY RAYLEIGH. The best three yellow Japanese blooms were shown by G. TULLEY, Esq. (gr. Mr. W. Macombie), Newton Hall, with fine examples of Princess Mary; second, Mr. HAY; third, LADY ALLINDALE. Mr. HAY was placed first in the class for one vase of any coloured variety, other than yellow, with the variety Mrs. A. Davis; second, LADY RAYLEIGH; third, LADY ALLINDALE.

In the class for two vases of single-flowered varieties, ten disbudded flowers in each vase, Mr. HAY was again successful, showing good flowers of Supreme, W. J. Godfrey, Phyllis Cooper and Bronze Molly; second, LADY ALLINDALE; third, T. D. STRAKER SMITH, Esq. (gr. Mr. J. Winder), Howden Dene. The remaining classes for single-flowered and decorative varieties were all keenly contested.

The specimen plants were a feature of the show. T. D. STRAKER SMITH, Esq., was placed first with a finely-grown plant of Blanche Poitivine in the decorative class; second, J. T. DOVE, Esq; third, G. TULLEY, Esq. In the class for two plants of a Single variety, J. T. DOVE, Esq., was awarded the first prize; second, T. D. STRAKER SMITH, Esq.; and third, Mrs. LAING.

For nine dishes of Apples, Mr. HAY excelled with a remarkably fine collection, including Bramley's Seedling, Lane's Prince Albert, Lord Derby, Warner's King, Alfriston and Annie Elizabeth. Capt. KEITH (gr. Mr. W. Cannell), Sandoe House, was a close second, the varieties Charles Ross, Rival and The Queen being particularly fine.

Capt. KEITH was placed first in the class for six dishes of Apples with varieties of fine quality; second, Mr. HAY; third, G. TULLEY, Esq.

In the vegetable classes some very good produce was shown. For six varieties, LADY ALLINDALE won the first prize with good Celery, Cauliflowers, Carrots, Onions, Brussels Sprouts and Leeks; second, T. D. STRAKER SMITH, Esq. The last-named gentleman was placed first in the class for three kinds of vegetables, Mr. HAY taking second place.

BIRMINGHAM AND MIDLAND COUNTIES.

At the fortnightly meeting of the above Association, held on November 22, Mr. J. Smith, Superintendent of the Birmingham Parks and Cemeteries, gave his "Annual Review," of the sixty-second Chrysanthemum show. The show, he said, eclipsed all others since the war, everything being of first-rate quality in the competitive classes, which the lecturer dealt with at some length.

SMITHFIELD CLUB SHOW.

THE annual show of the Smithfield Club, popularly known as the Cattle Show, which opened on Monday last at the Agricultural Hall, Islington, London, and closed on Friday, exists primarily for the exhibition of the finest cattle, sheep and pigs that are bred and fatted in our islands. The King is a regular exhibitor and when, as on the present occasion, His Majesty shows a championship animal, the success is exceedingly popular.

The floor of the large hall is given over to the animals, and the more bulky agricultural implements, while all around the gallery are displayed examples of farm crops of amazing quality. There may be seen Mangolds of enormous size and great food value set out in orderly, towering array; Flat-headed Cabbages of "cut-and-come-again" dimensions, and Kohl Rabi of such a size as never was seen or desired in a garden, but of importance to the farmer in some of the eastern counties, where the Swede Turnip does not thrive. The cattle Carrot, also, far surpasses the garden variety in size, but is distinct in flavour and colour.

These farm roots and green crops are the result of pedigree seeds, which are the subject of just as much care and attention as our garden varieties and, to the horticulturist it is interesting to note that the pre-eminent seedsmen are the same. For the large stands set out in such an imposing manner are the products of Messrs. SUTTON AND SONS, J. CARTER AND CO., ED. WEBB AND SONS, HARRISON AND SONS, TOOGOOD AND SONS, and others so well-known to gardeners for the excellence of their seeds.

As the garden is a necessary adjunct to the farmhouse, the seedsmen show perfect examples of the produce of their best strains of garden vegetables. Messrs. SUTTON AND SONS, Reading, had perfectly-shaped roots of their Intermediate Forcing Carrots, Onions, Leeks and Parsnips of exhibition size, their Globe Beet, dishes of Sutton's Masterpiece French Bean, and of Best of All Tomatos. The many dishes of Potatos included, in Perth Favourite and Glasgow Favourite, two new maincrops of heavy yield and high quality, while, amongst the older sorts, May Queen and Kerr's Pink were also well represented.

Potatos were also excellently displayed by Messrs. CARTER AND CO., whose coloured varieties included Red King, Mr. Breese and Kerr's Pink, while the chief of the whites were Tinwald Perfection, Golden Wonder and Arran Chief. Their other vegetables included Exhibition Sprouts, Holborn Marrow Parsnips, Holborn Model Leeks and Intermediate Beets of great perfection while the bulbs of Ailsa Craig Onion were superb.

In the exhibit of Messrs. E. WEBB AND SON were to be seen their New Volunteer Beet and Reliance Globe Beet, two varieties of the medium size approved by the cook, and of excellent appearance. They also gave prominence to Masterpiece Onion, and a great variety of first-rate Potatos, amongst which we noticed the old-time favourite, Sir John Llewelyn, with Edgcote Purple and Crusader. Here as elsewhere were roots of the Sugar Beet, which is distinct from all other Beets in its rugged exterior, much like a badly-grown Parsnip, and with high sugar content. The culture of the Sugar Beet has increased largely of late in the eastern counties, and with such success that at the moment, the factories, working at high pressure, are obliged to ask the farmers to hold their roots for a time.

The season, which has suited the Sugar-Beet, has also been very favourable for Brussels Sprouts, and there were splendid samples on view. Messrs. HARRISON AND SONS had wonderful pyramids of immense, firm and shapely "buttons" of their Harrison's XXX variety, while Messrs. E. W. KING AND CO. showed enormous plants taken up from their fields. Their scarlet Model Carrots, A.1. Onions and New Intermediate Beets were also of high quality, while their principal Potatos were Arran Comrade, Di Vernon, Majestic, Arran Chief and Dalmeny Early. In addition to their superb Sprouts, Messrs. HARRISON AND SONS had noteworthy samples of other vegetables, Ailsa Craig Onions, Early Market Carrots and Leeks of great magnificence. Good collections of vegetables were also shown by Messrs. ALEX. BLATCHFORD, LTD., who had Early Model Carrots, Obelisk Intermediate Beets, Lisbonnais Parsnips and Rousham Park Onions; Messrs. JOHN K. KING AND CO., and Messrs. TOOGOOD AND SONS, LTD., who had perfect examples of Carrots, Parsnips, Onions and many Potatos.

As was to be expected, Potatos were extensively shown, and all the best varieties were to be inspected, both as ware and as seed tubers. In addition to those already mentioned, a large number of firms had stands exclusively of Potatos. The largest was set up by Messrs. FIDLER AND SONS, who included Red King, a variety of King Edward, which is said to be equal in cropping value and of superior flavour to the parent. Edgecote Purple, Kerr's Pink, Crusader and Sir John Llewelyn were also included in this large exhibit. Potatos were also shown by Mr. GEORGE WHITE, Messrs. ROBERT MORRIS AND SON, Mr. GEORGE R. SHARP, Mr. A. FINDLAY, Messrs. W. J. CAMPBELL, and Messrs. W. DENNIS AND SONS.

Shapely tubers were also exhibited by Mr. JAMES GRAY, who had Ben Cruachan, Ben Lomond, Arran Consul and other good sorts; Messrs. LITTLE AND BALLANTYNE staged Catriona, Kerr's Pink, Majestic and many other varieties. Messrs. KENT AND BRYDON exhibited The Bishop, Dargill Early and Epicure in their stand. Similar varieties were shown by Mr. W. ROBERTSON, Mr. JAMES GARDINER, Mr. HERBERT SPEED, Mr. ISAAC POAD and Mr. K. SHARP.

Fruit was not so largely shown as might have been expected, but Messrs. W. SEABROOK AND SONS had trees in various forms, and brilliantly coloured fruits of Bismarck, Newton Wonder, Wealthy and Worcester Pearmain Apples, while their boxes of King of the Pippins Apples were exceedingly attractive. Mr. T. A. SCARLETT had many three-year-old bushes of Edina Black Currant of great vigour and said to be immune from attacks of big bud. He also staged various Potatos, Shallots, Onions, Savoys and Leeks of high quality.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

FRIDAY, NOVEMBER 26: *Committee Present.*—J. B. Adamson, Esq. (in the chair), Messrs. R. Ashworth, C. Branch, A. Coningsby, J. Cypher, J. Evans, A. Keeling, D. McLeod, E. W. Thompson and H. Arthur (Secretary).

FIRST CLASS CERTIFICATES.

Odontoglossum crispum Challenger.—A well-formed, white flower of good substance with very broad, fimbriated petals. From Mrs. GRATRIX.

Cattleya Eleanora var. Distinction.—A variety with pure white sepals and petals; the lip has a crimson base and the lobes are marked the same shade with a yellow throat. From J. B. ADAMSON, Esq.

Cattleya Clotho, Rann Lea variety.—A flower of perfect shape and even colour; the large lip has a crimson base and yellow throat. From H. J. BROMILOW, Esq.

AWARDS OF MERIT.

Odontoglossum crispum, Stonehouse variety; O. J. H. Knight (Eximillus × eximium); O. Jasper var. Ruby; O. Uro-Skinneri alba Rosefieldense; Cypripedium Titan (Shogun × Troilus Cravenianum); C. Erebus (Lord Roberts × Harrisianum superbum). From J. B. ADAMSON, Esq.

Odontioda Joiceyi var. Rae; Cypripedium Ashtonii, Haddon House variety (C. Grand Duke Nicholas × Sanactaeus Golden Dawn).—From Mrs. P. SMITH.

Cypripedium Prince David (Prince Albert × Vandyke).—From S. GRATRIX, Esq.

GROUPS.

J. B. ADAMSON, Esq., Blackpool (gr. Mr. J. Howes), staged a group to which a Gold Medal was awarded.

A Gold Medal was also awarded to S. GRATRIX, Esq., West Point (gr. Mr. C. Branch), for a group.

Messrs. J. CYPHER AND SONS were awarded a Silver Medal for an exhibit of Orchids.

Obituary.

James Clarke.—We regret to announce the death of Mr. James Clarke, at the early age of fifty-six, which occurred at Woodbridge, Suffolk, on the 1st inst., from heart trouble. He had charge of the herbaceous department of Mr. R. C. Notcutt's Nursery, Woodbridge, for the past twenty-seven years, during which time he made many friends in the district and was greatly respected by all who knew him. He commenced his horticultural career in a private garden, afterwards becoming employed by Messrs. Dobbie and Co., at Rothesay, and leaving there to come to Woodbridge in 1899. He leaves a wife but no family. The funeral took place on Saturday morning last, in Woodbridge Cemetery and was attended by a large number of the nursery employees.

NEW HORTICULTURAL INVENTIONS.

THESE particulars of New Patents of interest to readers have been selected from the Official Journal of Patents and are published by special permission of the Controller of His Majesty's Stationery Office.

LATEST PATENT APPLICATIONS.

28,654.—Ehricke, M.—Connecting agricultural implements to tractors. November 13.
28,334.—Hall, J.—Gardening, etc., tool. November 10.
28,440.—Kolofrat, J.—Garden, etc., implements. November 11.
28,026.—Moorman, F.—Machines for planting Potatos. November 8.
27,706.—Copland, A. A.—Spraying apparatus. November 4.

SPECIFICATIONS PUBLISHED.

260,706.—Townsend, H. G., and Searle, H. E.—Mechanism for operating greenhouse ventilators, fanlights and the like.
260,715.—McLaren, H.—Cultivators.
260,807.—Ross, Sir C.—Mowing-machines.
260,827.—Mazzocco, J.—Beet-topping machines.
260,832.—Cavanagh, A.—Machine for making drains in earth.

Printed copies of the full Published Specifications may be obtained from the Patent Office, 25, Southampton Buildings, London, W.C.2, at the uniform price of 1/- each.

ABSTRACT PUBLISHED.

A simple plant for separating broken pieces of Beet and other crops from the usual litter of leaves and straw brought in from the field is the subject of a patent granted to Société Nouvelle des Etablissements a'Maguin, of Charmes pres la Fere, Aisne, France. The mixture of waste and Beet, etc., are fed to one end of a travelling band, and are projected from the other end, the more adhesive matter, such as leaves, being projected along a trajectory on to a second belt, and the Beetroot pieces along another trajectory to the Beet heap. The second belt running at a steep angle carries away the leaves, etc., and allows any intermixed Beetroot particles to roll down to the heap.

GARDENING APPOINTMENTS.

Mr. S. G. Maddick for the past five years foreman to the EARL OF DUCIE, Tortworth Court, Gloucestershire, as gardener to MAJOR ROTHWELL, Morebath Manor, N. Devon.

Mr. J. Chilcott, for the past seven years gardener to the late MRS. ROBERTSON and MISS ROBERTSON, Dogleap, Limavady, Co. Derry, and previously at Ampton Hall, Bury St. Edmunds, as gardener to Capt. GUY H. V. GOUGH, Lough Cutra Castle, Gort, Co. Galway.

MARKETS.

COVENT GARDEN, Tuesday, December 7th, 1926.

Plants in Pots, etc.: Average Wholesale Prices.

(All 48's except where otherwise stated).

	s. d. s. d.
Adiantum cuneatum per doz. ...	10 0 12 0
—elegans ...	12 0 15 0
Aralia Sieboldii	9 0-10 0
Araucarias, per doz.... ...	30 0-42 0
Asparagus plumosus ...	12 0-18 0
—Sprengeri ...	12 0-18 0
Aspidistra, green	36 0-60 0
Asplenium, doz.	12 0-18 0
—32's	24 0-30 0
—nidus ...	12 0-15 0
Cacti, per tray —12's, 15's ...	5 0—7 0
Cyclamens, 48's, per doz. ...	18 0-21 0
Chrysanthemums, in variety, 48's, per doz. ...	18 0-30 0
Crotons, doz. ...	30 0-45 0
Cyrtomium ...	10 0-25 0

	s. d. s. d.
Erica gracilis, 48's, per doz.	24 0-36 0
—60's, per doz.	9 0-12 0
—hyemalis, 48's, per doz. ...	24 0-30 0
—60's, per doz.	12 0-15 0
—nivalis, 48's per doz. ...	24 0-36 0
—60's „ ...	12 0-15 0
—72's „ ...	8 0--9 0
Hydrangeas, white, 48's per doz.	24 0-30 0
Nephrolepis in variety ...	12 0-18 0
—32's	24 0-36 0
Palms, Kentia	30 0-48 0
—60's	15 0-18 0
Pteris in variety	10 0-15 0
—large, 60's ...	5 0--6 0
—small ...	4 0--5 0
—72's, per tray of 15's ...	2 6--3 0
Solanums, 48's, per doz. ...	12 0-18 0
—60's, per doz.	9 0-10 0

Cut Flowers, etc.: Average Wholesale Prices.

	s. d. s. d.
Adiantum decorum, doz. bun.	15 0-18 0
cuneatum, per doz. bun. ...	10 0-12 0
Asparagus plumosus per bun., long trails, 6's ...	2 6—3 6
med. sprays	1 6—2 6
short ...	0 9—1 3
—Sprengeri, bun. long sprays	1 6—2 0
med. „	1 0—1 6
short „	0 4—1 0
Bouvardia, white per doz. bun.	12 0-15 0
Camellias, 12's, 18's per box...	2 6—3 0
Carnations, per doz. blooms...	3 6—5 0
Chrysanthemums, white, per doz.	2 6—5 0
—bronze „	3 0—5 0
—white, per doz. bun. ...	8 0-12 0
—bronze, per doz. bun. ...	9 0-15 0
—yellow, per doz. blooms ...	2 6—4 0
—yellow, per doz. bun. ...	9 0-15 0
—pink, per doz. blooms ...	3 0—6 0
—pink, per doz. bun. ...	9 0-15 0
—red, per doz. blooms ...	3 0—5 0
— — per doz. bun.	9 0-12 0
—specimens, per doz. blooms...	15 0-18 0
—Single Varieties—disbudded blooms, per doz. ...	2 6—4 0
—spray, per doz. bun.	12 0-18 0
Croton leaves, per doz. ...	1 9—2 6
Fern, French, per doz. bun.	10 0-12 0
French Flowers—	
—Acacia (Mimosa), per doz. bun.	12 0-15 0
—Eucalyptus, per pad	5 0—6 0
—Ruscus, green, per pad ...	6 0—8 0
—Myrtle, green, per doz. bun.	1 6—2 0
—Narcissus, Paper White, per doz. bun.	3 0—4 0
—Solanum berries. 300's, per pad	10 0-12 0

	s. d. s. d.
French Flowers—	
—Violets, Parma, per bun. ...	4 0—6 0
Gardenias, 12's, 18's per box .	6 0—8 0
Heather, white, per doz. bun.	6 0—9 0
—pink, per doz. bun. ...	6 0—8 0
Honesty, per doz. bun. ...	15 0-18 0
Lilac, white, per doz. stems ...	6 0—7 0
Lilium auratum, per doz. blooms ...	10 0-12 0
—longiflorum long, per doz.	5 6—6 0
—speciosum rubrum, long, per doz. blooms ...	3 6—4 6
—short, doz. blooms ...	2 0—2 6
Lily-of-the-Valley, per doz. bun.	24 0-36 0
Marguerites, yellow, per doz. bun.	2 6—3 0
Orchids, per doz.	
—Cattleyas ...	24 0-36 0
—Cypripediums per doz. blooms ...	6 0—8 0
Poinsettias, per doz. blooms ...	18 0-30 0
Ranunculus—	
—double scarlet	4 0—6 0
—white ...	4 0—4 6
—yellow ...	8 0-12 0
Richardias (Arums), per doz. blooms .	7 0-10 0
Roses, per doz. blooms—	
—Madame Abel Chatenay ...	3 6—5 0
—Molly Sharman Crawford	3 6—5 0
—Richmond ...	5 0—7 0
—Golden Ophelia	5 0—6 0
—Mrs. Aaron Ward ...	3 6—4 0
—Madame Butterfly	5 0—8 0
—Safrano, 24's per packet ...	2 6—2 9
Smilax, per doz. trails ...	3 0—4 0
Violets... ...	3 0—4 0

Remarks.—Prices of Carnations, Liliums and Roses are firmer owing to shorter supplies. The best varieties of Roses now on sale are Madame Butterfly, Golden Ophelia, Molly Crawford, Columbia, Roselandia and Richmond. The supplies of Chrysanthemums still exceed the demand; many sorts are arriving in a very soft condition and only the late varieties, both spray and disbudded, are realising normal prices. Single varieties are generally good and cheap. Prince of Wales Violets are arriving in good condition but their numbers have been reduced somewhat owing to the colder weather. Single St. Brigid Anemones, of which there are small consignments, are fairly good, and there are a few Christmas Roses from Cornwall. Hyacinths on bulbs are also on offer. Large quantities of Christmas trees and Holly are arriving; better quality Mistleto is expected this week, but so far, there is no great demand for these decorations. Flowers from France are arriving in much better condition; Paper White Narcissus is much finer in quality, also pads of single Violets and large bunches of Parma Violets. The newest subjects from French growers are a few pink Anemones and yellow Narcissus. All Ranunculuses are gradually improving in quality, also Marigolds. Chillies and Solanum berries are selling more freely for decorative purposes. Green Ruscus is also in demand for this purpose. White Lilac is arriving from Holland in better condition, also some very good Lily-of-the-Valley on roots.

Fruit: Average Wholesale Prices.

	s. d. s. d.
Apples, American—	
—York Imperial per barrel ...	20 0-24 0
—British Columbia	10 0-12 0
—Virginian Greening	28 0-30 0
—Oregon Newtown	10 0-12 0
— —Winesap ...	10 0-10 6
—Rome Beauty	9 0-10 0
—Nova Scotian—	
—Ribston Pippin, per barrel ...	22 0-26 0
—Blenheim Pippin, per barrel	22 0-26 0
—Greenings, per barrel... ...	22 0-26 0
—Others ...	20 0-22 0
Apples, English—	
—Newton Wonder ...	10 0-14 0
—Bramley's Seedling	10 0-20 0
—Oregon ...	10 6-13 6
—Californian Newtown Pippin	9 0-10 0
— —Winesap ...	10 0-10 6
— —Winesap per barrel ...	20 0-22 0
Bananas ...	12 0-22 0
Brazils, per cwt.	30 0-35 0
Chestnuts, Redon, per bag	12 0-15 0
—Italian ...	18 0-22 0
—Naples ...	25 0-30 0
Cob nuts, per lb.	0 8—0 9

	s. d. s. d.
Grape Fruit—	
—Blue Goose ...	25 0-32 6
—British Honduras ...	— 24 0
Grapes, English—	
—Guernsey Alicante	0 9—1 3
—Gros Colmar	1 6—3 0
—Colmar ...	1 3—3 6
—Alicante ...	1 6—3 6
—Muscat ...	4 0—8 0
Grapes Belgian	1 6—1 9
—Almeria ...	16 0-30 0
—Algerian Navel, per tray ..	7 0—8 0
Lemons, Messina, boxes ...	10 0-14 0
—cases	30 0-35 0
Oranges—	
—Californian ...	20 0-25 0
—Spanish, 300's, 200's... ...	23 0-30 0
Peaches, Belgian per doz. ...	8 0-20 0
Pears, English—	
—Comice, ½ sieve	9 0-12 0
—Special, per doz.	4 0-12 0
Pears—	
—Californian Comice—½ cases ...	20 0-22 6
—Winter Nelis, case	24 0-28 0
—Beurré D'Angou, ½ case ...	— 16 0
Pines	2 6—4 6
Walnuts, Grenoble ... bag .	11 0-14 0

Vegetables: Average Wholesale Prices.

	s. d. s. d.
Asparagus, Devon	6 0—8 0
— —Paris Green	8 0-10 0
Beans—	
—Best	3 6—5 0
—Ordinary ...	2 6—3 0
—Madeira ...	3 0—7 0
Beets, per cwt.	5 0—6 0
Cabbage, per doz.	2 0—2 6
Carrots, per ½-bag ...	4 0—5 0
Cauliflowers—	
—English, doz.	2 0—4 0
—St. Malo, crate	6 0—8 0
Celery, fans ...	1 6—2 6
Cucumbers, per doz.	18 0-24 0
French Batavia	2 6—3 6
French Endive, per doz. ...	2 6—3 0
Lettuce, round, per doz. ...	1 6—2 6
Mint, forced, per doz. ...	4 0—8 0
Mushrooms	
—cups ...	3 0—4 0
—Broilers ...	2 3—2 6

	s. d. s. d.
Onions—	
Valencia ...	8 6 10 0
Parsnips, per cwt. ...	4 6—5 6
Peas, Forced, per lb. ...	2 6—3 0
Potatos—	
—King Edward ton	£8, £9/10
—others, ton...	£5, £7/10
Rhubarb, forced, per doz. ...	6 0—9 0
Savoys, per doz.	1 6—2 0
Seakale, per punnet ...	4 0—5 0
Sprouts, Brussels per ½-bag ...	2 0—6 0
Tomatos—	
—Canary Island	20 0-25 0
—English, pink new crop ...	8 0-10 0
—pink and white, new crop ...	8 0—9 0
—Guernsey ...	3 0—6 0
—Belgium ...	4 0—6 0
—Jersey ...	3 0—6 0
Turnips, per cwt.	4 6—5 6

Remarks.—The better weather conditions have, no doubt, been responsible for the improvement in demand reported by most sections. Hothouse Grapes are in ample supply but trade is good and prices are firmer. Belgian Grapes are also more plentiful, but prices in this section are inclined to be easier. There is an excellent demand for good Pears, and some English- and Belgian-grown fruits of Doyenné du Comice have met with firm inquiry. Oranges from various sources are selling freely, if of good quality. Stocks of imported Apples are sufficient for the present demand and prices remain steady. A few good Bramley's Seedling and Cox's Orange Pippin Apples are arriving each day and sell freely at comparatively high prices. Forced Beans, Peas and new Potatos maintain steady prices. Mushrooms are not plentiful and their value has advanced. Tomatos from the Canary Islands are in short supply and listed at higher rates. The few English new crop Tomatos that are available sell well at prices satisfactory to the growers. Cucumbers are scarce and costly. Cauliflowers are variable in supply which affects selling and prices accordingly. Salads, mainly French, are fairly popular and their prices remain steady. Green vegetables are a quiet trade. Some new Potatos and sweet Potatos from the Azores have sold freely at good prices. Trade in old Potatos remains unchanged, with first-grade tubers in request.

GLASGOW.

With the increasing scarcity of first quality blooms of Chrysanthemums, prices continued to advance until they reached the highest level of the season during the past week. Cheap grades, however, remain plentiful, and a times were difficult to clear. Single varieties were in keen demand and buyers had to concede higher values. Molly Godfrey, W. Duckham and Susan made 2/- to 2/6 for 6's; Reginald Godfrey, 1/9 to 2/-; Absolute, 1/6, Phyllis Cooper and Buck Bee, 1/3 to 1/6; Lucy Louppe and Thorpe, 1/- to 1/3; Jean Pattison, 10d. to 1/2; and Florrie King, 8d. to 10d.; while small blooms ranged from 3d. to 6d. Pink Roses were dearer at 5/6 to 6/6 per dozen; red Roses made 4/6 to 5/-; and white, 3/- to 4/-. Carnations were a firm market at 4/9 to 5/6 per dozen, and Lilium longiflorum (Harrisii) was worth 5/- to 6/- per bunch. Prices of Narcissi remained steady at 2/6 per dozen bunches. Smilax realised 1/6 to 2/- per bunch, and Asparagus, 1/- to 1/6.

The feature of the fruit market was the advance in prices of American Apples. Jonathan and Winesap sold at 9/6 to 12/ per case; Oregon Newtown ex-fancy, 13/- to 14/; fancy, 11/6 to 12/6; C grade, 10/6; Northern Spy, 12/6; Canadian King, 10/6 to 11/-; Greening, No. 1, 28/- to 30/-; No. 2, 22/-; Domestic, 24/- to 25/-; Ben Davis, No. 1, 18/-; No. 2, 16/-; Cox's Orange Pippin No. 1, 20/-; Baldwin, No. 1, 22/- to 25/-; No. 2, 19/- to 22/-; King No. 1, 28/-; Golden Russet No. 1, 25/-; No. 2, 23/-; Stark No. 1, 22/-; No. 2, 18/-; and Pewaukee No. 2, 18/-. Californian Winter Nelis Pears were worth 14/- half-case; Bartlett Pears, 24/- per cask, and Washington Winter Nelis, 18/- to 22/- per case. Valencia Oranges: 300's sold for 22/- to 26/-; 316's 17/- to 20/-; and prices for other Oranges were Jamaica, 16/6; Mandarin, 420, 16/- to 21/-; trays, 1/9 to 2/9. Grape Fruit realised 20/- to 22/-; Scotch Colmar Grapes, 3/6 to 3/9 per lb. Almeria Grapes, 23/- to 25/- per barrel. Italian Chestnuts were worth 26/- per bag; French Chestnuts, 20/-; Figs (10lb), 8/-; glove boxes, 6/6 to 8/- per dozen. Teneriffe Tomatos fetched 20/- to 30/- per bundle.

In the vegetable market Cucumbers at 15/- per dozen and Cauliflowers at 10/- per crate were very scarce; Lettuces made 6/- per crate; French Beans, 6/- per box; Onions 10/- to 12/- per case, and field Carrots, 4/6 to 5/- per cwt.

TRADE NOTES.

The catalogue of seed Potatos and Gladioli issued by Messrs. D. and W. Croll, Ltd., of Dundee, is particularly interesting because it contains excellent reproductions from photographs of such scenes as the lifting of a Potato crop on a hill farm; clamping and covering Potatos—a view of a "pit" of Majestic, 200 yards long; and carting King Edward Potatos to the "pit." The firm is offering two new varieties of Potatos, Claymore and Clovullin, both raised by Mr. D. M'Innes, gardener to the Earl of Strathmore, Glamis Castle. Claymore is a late round variety, and one of the outstanding Potatos at the Ormskirk Trials in the present year. Both Claymore and Clovullin are immune to Wart disease.

Readers requiring information and advice respecting Patents, Trade Marks or Designs, should apply to Messrs. Rayner & Co., Patent Agents, of 5, Chancery Lane, London, who will give free advice to readers mentioning *The Gardeners' Chronicle*.

ANSWERS TO CORRESPONDENTS.

Mulberry Trees.—*O. J. M. R.* The Mulberry is one of the easiest of fruiting trees to propagate, and may be grown quite easily from either summer, autumn or winter cuttings; indeed, a moderately-sized branch pulled away from the parent tree and placed firmly in the ground, either in spring or autumn, will usually take root and grow.

Names of Fruits.—*A. E. M.* 1, Cornish Mother; 2, Christmas Pearmain; 3, Prince Bismarck; 4, Rosemary Russet; 5, Allington Pippin; 6, Dutch Mignonne (syn. Reinette de Caux); 7, Lord Burghley; 8, King of the Pippins; 9, Newton Wonder; 10, Smalls' Admirable; *M. C.* 1, Bramley's Seedling; 2, Gascoyne's Scarlet Seedling; 3, Beauty of Kent.

Names of Plants.—*Kentish Cob.* 1, Picea pungens var. glauca; 2, Cupressus Lawsoniana var. lutea; 3, Thuya plicata var. zebrina; 4, Cupressus sempervirens; 5, Cupressus Lawsoniana var. ochroleuca; 6, Juniperus chinensis; 7, Thuya dolabrata; 8, Cupressus pisifera var. plumosa; 9, C. Lawsoniana; 10, Cytisus monspessulanus; 11, Cotoneaster Simonsii; *W. J. S.* 1, Olearia macrodonta; 2, Griselinia littoralis; 3, Verbascum phoeniceum.

Communications Received.—W. H.—A. E. (Thanks for 1/- for R.G.O.F. Box).—J. B.—A. G.—A. G. F.—G. L.—E. M.—J. P.—S. I.—J. R

THE
Gardeners' Chronicle

No. 2086.—SATURDAY, DECEMBER 18, 1926.

CONTENTS.

Alpine garden—
  Helichrysum frigidum 489
  Dianthus petraeus .. 489
Apples, biennial cropping of 496
Bayley Balfour, memorial to Sir Isaac 491
Bog garden—
  Chimaphila maculata 489
Bonfires 482
Bulbs, planting ... 496
Canadian fruit exports 482
Chrysanthemums at Miller Park, Preston 483
Crockett, Mr. G., presentation to ... 482
Daffodil seedling, life history of a... ... 488
Entomology, the progress of economic ... 492
Exhibition of plants at Chiswick in 1848 ... 492
Flower garden—
  Ceratostigma plumbaginioides ... 488
  Winter flowers ... 488
Fruit garden, the market 493
'Gardeners' Chronicle" seventy-five years ago 483
Hardy flower border—
  Anemone japonica Queen Charlotte... 488
  Perovskia atriplicifolia 488
Indoor plants—
  Passiflora racemosa and P. Watsoniana 486
  Plumbago rosea ... 486
Lilies and lime ... 490
Moore medal for the best Cypripedium of the year 481
Orchid notes and gleanings—
  Laelia anceps ... 486
Orchids, new hybrid ... 486
Papain 482
Parks and gardens ... 496
Plants new or noteworthy—
  Buddleia Forrestii... 489
Potato, black-leg disease of 495
Societies—
  British Mycological 498
  Lea Valley District Nurserymen and Growers 499
  National Chrysanthemum 499
  Reading and District Gardeners' ... 498
  Royal Horticultural 497
  Scottish Seed and Nursery Trade .. 496
  The Orchid Club ... 499
Stacey, Mr. G. W. ... 482
Sugar Beet cultivation in Scotland... ... 494
Tax puzzles in Belgium 483
Tourists and English gardens 482
Trees and shrubs—
  Periploca graeca ... 487
  Red-fruited, hybrid Barberries ... 487
  Viburnum Opulus fructu-luteo ... 486
Trees, roadside ... 490
Variegation 481
Vegetable garden—
  Cauliflowers ... 495
  The value of deep trenching ... 495
Water garden—
  Heracleum giganteum ... 489
Week's work, the ... 484

ILLUSTRATIONS.

Bayley Balfour Memorial in the Royal Botanic Garden, Edinburgh 491
Berberis Autumn Cheer 487
Broccoli, late, on dug land at Aldenham, 494; on trenched land 495
Buddliea Forrestii 489
Chrysanthemums in the conservatory at Miller Park, Preston 483
Periploca graeca, fruits of 485
Stacey, Mr. G. W., portrait of 482

Average Mean Temperature for the ensuing week deduced from observations during the last fifty years at Greenwich, 38.5.

Actual Temperature—
The Gardeners' Chronicle Office, 5, Tavistock Street, Covent Garden, London, Wednesday, December 15, 10 a.m. Bar. 30.5. Temp. 39°. Weather, Sunny.

Variegation.

In field and in garden alike variegation is widespread. All manner of plants seem to grow tired of the green monotony to which they are condemned. Some merely mask it by introducing superficial pigments. Such, for example, are the red seaweeds, the real greenness of which may be revealed by plunging the fronds into hot water. A similar disguise is assumed by the leaves of species of Beech, Pyrus and many other plants. But other plants appear to be attacked by some malaise which converts what should become green tissues into tissues which are yellow, white or golden and thereby appear as truly variegated plants. Generally, moreover, there is a fairly well marked regularity in the distribution of green and non-green tissues of leaf and stem. In many cases the variegated plant is what is now known as a periclinal chimera, that is, one in which the external layer or layers of tissues, losing power of making green chloroplasts, over-lie deeper tissues, the elements of which retain the power of forming perfect chlorophyll grains. Such a chimera is described as a "white over green"; or the opposite arrangement may occur and a green over white chimera arise. One and the same plant may, indeed, with the ruthlessness of its malady, change over from the one type of chimera to the other, not, of course, by changing its established mature parts, but by producing branches which show reversal of tissue arrangement. In other cases the variegation is sectorial—half or part of leaf and stem may be normal green, the remainder may lack greenness. Both the sectorial and periclinal types of variegation are apt to be unstable and either the one or the other and particularly the sectorial, may throw out fully green branches or entirely white branches or, as has been said already, may change its spots, that is, the style of its variegation. No less, and, indeed, even more remarkable is the behaviour of variegated plants with respect to the offspring which they produce. In some cases variegated plants behave in reproduction in a perfectly simple way. But in many other cases their behaviour is extremely difficult to interpret in terms of Mendelian schemes. As our readers know, the investigation of variegation, and particularly of its genetics, has been followed for many years both by the late Dr. Bateson and by his pupils at the John Innes Institute. In particular Mr. R. J. Chittenden has studied this question with great thoroughness and his most recent contribution[*] demonstrates at once that orderliness lies obscurely behind the apparent vagaries of the phenomenon and that to discover exactly the different kinds of orderliness is an extraordinarily difficult task and one, moreover, which is rendered yet more difficult by the fact that many of the most interesting variegated plants are defective with respect to seed-setting and even flower formation. In illustration of the success which has attended these attempts to unravel the physiological significance and genetics of variegation, Mr. Chittenden's observations on Hydrangea may be described. In this genus there are three types of variegation. In Type 1, stem and leaf are white save that the leaf margins or lobes are green; in Type 2, the arrangement is similar except for the fact that the green lobes are distributed irregularly and in Type 3, the arrangement is like that in Type 2, save that the lobes are yellow. Although all these types are to all intents and purposes self-sterile, they may each be used as the female parent to be crossed with a "green" male parent. The result of such crossing is to show maternal inheritance. Thus Type 1 (female) crossed with the non-variegated, green Hydrangea Mariesii, possesses, as has been stated, green leaf margins and gives all green seedlings. Type 2 (female) crossed with the same green male parent, possessing green lobes projecting at intervals from an otherwise white margin, yields both green and white seedlings. Type 3 with its yellow lobes, gives yellow and white seedlings, none of which, however, is viable. Thus in all cases the seedlings reflect, as it were, the marginal variegation, and, indeed, so much is this the case that where the plant has more of the latter the corresponding seedlings are more numerous. Thus a very yellow-lobed Type 3 plant gives, when crossed with the green male parent, a higher percentage of yellow (aurea) seedlings than does one with few yellow lobes. Things are more complicated and obscure in the Zonal Pelargoniums. The variegation itself appears to be more varied and the genetics by no means so simple. Extreme examples are provided by the well-known varieties Freak of Nature and Happy Thought, the former of which was introduced into commerce by Cannell in 1870. Its peculiar full green, as a puckered band round the edge of the white leaf, is well-known, as is also the fact that it produces flowers freely, which, however, are small and without good pollen. It is, of course, seedless. Freak of Nature sports most irresponsibly, producing green branches, and white or green over white, and these branches, unlike those of the Freak type, bear good flowers with well-developed pollen and set seed—even the white branches. Happy Thought, a variety with green and light and easily bleaching yellow in the centre of its leaves, does produce seed and of its offspring, some are green, some green-yellow and some variegated. Here, therefore, is a definitely different result from that yielded by Hydrangeas. How the conflicting results are to be reconciled is not clear, but we for our part are inclined to agree with the cautiously expressed suggestion of Mr. Chittenden that botanists may have to revise their opinion of the process of fertilisation to this extent, that whereas it is generally held that in fertilisation the only representative of the male parent which contributes to the offspring is the nucleus, it may be that the contribution in some plants includes not only male nucleus, but also one or more plastid forerunners of the chlorophyll grains. If this hypothesis be admissible then it would follow that whereas in Hydrangea no male plastid affected by the malady which makes for variegation passes to the egg cell, with the result that the inheritance of variegation is purely maternal, yet in Zonal Pelargoniums plastids from the male parent pass with the male nucleus and become part of the seedling, thereby contributing their quota to the plastid constituents of the seedling, of which quota some may be carrying and may perpetuate the variegation which characterised the plant of which they were part.

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[*] Studies in Variegation. II, Hydrangea and Pelargonium, etc., By R. J. Chittenden. Student of the John Innes Horticultural Institute. *Journal of Genetics*, Vol. 16, No. 1.

"The Gardeners' Chronicle" Almanac for 1927.—Our Almanac for the ensuing year, giving the dates of the principal flower shows in Great Britain and of the meetings of horticultural and botanical societies, is now being prepared and will be published in an early issue of the New Year. Secretaries of horticultural botanical and other societies are requested to send the dates of their shows, meetings, etc., so soon as possible, in order that they may be included in the Almanac.

Moore Medal for the best Cypripedium of the Year.—G. F. Moore, Esq., of Chardwar, Bourton-on-the-Water, who has done so much to advance the improvement and cultivation of Cypripediums, offered a medal, to be known as the Moore Medal, to be awarded annually to the raiser of the best Cypripedium of the year. On Tuesday last a special sub-committee of the R.H.S. Orchid Committee met at the Royal Horticultural Hall to make the award for 1926, and agreed that the finest Cypripedium of this year was C. Sir Trevor, raised by G. F. Moore, Esq. (gr. Mr. Page), and exhibited by him at a meeting of the Royal Horticultural Society on January 26, when the Orchid Committee granted it a First Class Certificate and recommended a Silver Lindley Medal in addition to this high award. Cypripedium Sir Trevor is a magnificent hybrid obtained by crossing a hybrid between C. Ansuto var. Sallieri and C. aureum with C. Christopher var. Grand Duke Nicholas. The flower is finely proportioned, and the colouring is yellow-green, green and white. C. Sir Trevor was described in *The Gardeners' Chronicle* of January 30, 1926, and illustrated in the succeeding issue. It is a matter of considerable interest, and peculiarly fitting, that the first Moore Medal—awarded without Mr. Moore's knowledge—should be granted in favour of the donor.

National Sweet Pea Society.—This Society will hold its twenty-seventh exhibition on Thursday and Friday, July 7 and 8, 1927. During the present year the exhibition was held in Cheltenham, so in accordance with the usual arrangement of holding exhibitions alternately in the provinces and in London, the exhibition of 1927 will be held in the Royal Horticultural Hall, Vincent Square, Westminster. The schedule of prizes for this forthcoming show has just been issued, and it contains fifty-seven classes. The prizes offered in cash, cups, plate and medals, amount to a large sum, the principal awards being the City of Bath Cup, the Eastbourne Cup, the *Daily Mail* Cup, the Monro Cup, the E. W. King Cup, and the Burpee Cup. Both trade growers and amateurs are well catered for. *The Gardeners' Chronicle* Medal will be awarded to the best exhibit in classes not open to the trade. Schedules may be obtained from the Secretary of the Society, Mr. A. C. Bartlett, 19, Bedford Chambers, Covent Garden, W.C.2.

Presentation to Mr. George Crockatt.—For over forty-six years, Mr. G. Crockatt, has been gardener at Glengall Hospital, near Ayr, from which position he is now retiring. A few days ago he was entertained at a social gathering in the hall of Glengall Hospital, when he was made the recipient of handsome presents by members of the staff on the occasion of his retirement from active service. Dr. M'Rae, who presided, presented Mr. Crockatt with an Oak sideboard suitably inscribed, and in doing so referred to the splendid qualities of their guest. Mr. Crockatt, who previously was gardener at Westmoreland and Cumberland Asylum for five years, served his apprenticeship under the late Mr. Johnston, at Glamis Castle gardens.

Bonfires.—The law suit reported in the daily press at the beginning of December (Haywood v. London and North Eastern Railway) concerning a collision between a char-a-banc and a motor omnibus while crossing a railway bridge, and which was stated to have been due to the smoke from a bonfire blowing in the drivers' eyes, raises an interesting question as to liability incurred by the practice of burning garden rubbish in a bonfire. In the case mentioned, the railway company—whose servant it was who had lighted the bonfire in question—was held not to be responsible for the smoke produced, and the Lord Chief Justice, in summing up, is reported to have said that it would be a hard doctrine to hold that no one should be allowed to burn rubbish on his own property, and that he knew of no rule in law that rubbish should only be burned when the wind was not blowing across the adjoining road-way. The wind had a habit of changing, and it was impossible that people should shift their rubbish about according to the change of wind. Many of the most enlightened gardeners at the present time are beginning to think that burning is a wasteful method of disposing of all garden refuse, without distinction, much of it being capable, by the exercise of a little skill and patience, of conversion into a valuable manure. Even then, however, there always remains a residue which cannot be disposed of economically or cleanly in any other way but by incineration.

Papain.—Papain, which has powerful protein digestive properties and is used to cure chronic indigestion, for rendering meat tender, and in place of rennet for curdling milk, is obtained from the Papaw (Carica Papaya), and at present is almost entirely produced in Ceylon. The Department of Agriculture, South Africa, recommends growers in the Union to engage in the production of this drug, for many parts of the Union are said to be favourable to th growth of Carica Papaya. A tree produces on an average thirty fruits, which yield one pound of the latex, containing 16 to 18 per cent. of papain. Ceylon papain has a present value of 12/- to 14/- per pound, but the normal price is 7/- to 8/6 per pound. An interesting fact in connection with the production of papain is that the scarified fruits suffer but little in flavour although their market value is lowered because of the injured appearance.

Mr. George W. Stacey.—Few men have wandered so little in search of horticultural experience as Mr. Stacey, as he has spent the greater part of his life at Chorleywood Cedars, Chorley Wood, Hertfordshire, a garden justly famed for the magnificent specimens it contains of the Cedar of Lebanon, and now likely to be famous floriculturally for the seedling Hydrangeas Mr. Stacey has raised. The son of a well-known farmer in West Hertfordshire, Mr. G. W. Stacey began his horticultural career at Chorleywood Cedars when only thirteen years of age, serving under Mr. Waterman and continuing his education at the County Council evening classes. He won a scholarship in 1899-90 and gained a First Class Certificate from the Board of Education in an examination in agriculture and allied subjects. After several years spent at Chorleywood Gardens, he entered service with Messrs. James Veitch and Sons at their Chelsea Nurseries, and afterwards passed on to Earl Darnley's garden at Cobham Hall, Kent. In 1908, the late Mr. J. S. Gilliat invited him to return as foreman at Chorleywood Cedars, an invitation he accepted; in 1915, after the death of Mr. Gilliat, he was appointed gardener to Reginald Wiley, Esq., who took over the management of the estate. Three years later, the mansion and grounds of Chorleywood Cedars were purchased by J. H. Batty, Esq., and Mr. Stacey remained as gardener and bailiff. Later, Mr. Batty generously made over the mansion to the National Institute for the Blind for use as a college for girls with little or no sight, and Mr. Stacey now continues to act both on behalf of the Institute and Mr. Batty. Although he passed for foreign service on the outbreak of war, Mr. Stacey was exempted from serving with the colours, and immediately became a special constable, and has continued in that service ever since. He also undertook the planning and management of large areas for food production and assisted in the management of several large gardens with depleted and "scratch" staffs. Mr. Stacey is a clever cultivator, as demonstrated by several illustrations of plants, etc., at Chorleywood Cedars, which have appeared in these pages. He takes an interest in local affairs and has been a member of the Chorley Wood Urban District Council since its formation in 1912, and has acted as Chairman of its Finance and other committees. Being a sportsman, he took a leading part in the formation of the local Artisan Golf Club (Holly Bush), and is a member of the Council of the Artisan Golfers' Association, besides being associated in various ways with several local sports clubs. Further evidence of M. Stacey's versatility is found in his service as a chorister in the Chorley Wood Parish Church, where his father also served as a member of the choir for forty-nine years.

MR. G. W. STACEY.

Foreign Tourists and English Gardens.—The beauty of the English landscape always appeals to the large number of foreign visitors, and especially American citizens, who visit this country on holiday or pass through to the Continent, and they are even more impressed with the grandeur of the gardens attached to many of our large country residences. It has been pointed out that this feature of a holiday in England should be made more widely known, and Mr. A. M. Samuel, Minister for Overseas Trade, has suggested to Lord Lambourne that something should be done in the matter. As a result, the Royal Horticultural Society is compiling a list of important gardens in the United Kingdom which people will be free, by arrangement, to visit. An earlier list drawn up by the English Speaking Union, is being made use of as a basis. Copies of the list will be circulated to hotels and other centres so that visitors may readily learn where they may see examples of English gardening art. In an interview with a representative of *The Observer*, Lord Lambourne stated that there is not an attraction in the country greater than the pleasure garden; there is nothing like it in any other country I know, he said, "and I have been in most." His Lordship said he was sure it would be a fine thing if people saw more of our incomparable gardens. In his experience there was little wanton damage, but much thoughtlessness in leaving litter about. It is hoped, Lord Lambourne said, to find means of overcoming this difficulty so that the majority will not suffer for the misdeeds of the few. As a general rule, he explained, owners would be delighted to let people visit their gardens.

Sugar Beet in Scotland.—Last Saturday, the Cupar Beet Factory, which is the sixth and most recent of the Anglo-Scottish Beet Sugar Corporation, Ltd., was formally opened by Lady Gilmour, the wife of the Secretary of State for Scotland. The Cupar Factory is all-British and is claimed to be one of the best equipped in the world. The factory had been erected during the past twelve months, and is capable of turning out 1,500 tons of sugar per calendar month. If the venture proves to be as successfull as is anticipated other similar factories will be installed in Scotland.

Protection of Alpine Flowers.—So much damage has been done to the native flora of the alpine districts of Italy by tourists, both native and foreign, returning from the mountains with enormous loads of flowers, especially Rhododendrons, and causing damage of various kinds, that legislation has been necessary. Principally through the endeavours of the Prefect of the Venezia Tridentina and the Italian Touring Club, a decree has been passed which forbids "(1) The breaking or uprooting of flowers and plants; (2) the gathering of flowers growing on other people's ground, except in very small quantities; and (3) trading in flowers, with or without roots."

Canadian Fruit Exports.—The High Commissioner for Canada is officially advised by cablegram from Ottawa that between November 11 and 17, the following quantities of Canadian Apples were despatched to United Kingdom ports:—London, 5,000 boxes from British Columbia; Liverpool, 4,000 boxes from British Columbia, and 1,000 barrels from Ontario; Glasgow, 14,000 boxes from British Columbia, and 3,000 barrels from Ontario; Southampton, 11,000 boxes from British Columbia; Newcastle, 2,000 boxes from British Columbia.

Chrysanthemums at Miller Park, Preston.—The brilliant display of Chrysanthemums provided by the public authorities at Preston has been visited by many thousands of people, many of whom have shown a great interest in the varieties represented. The exhibition (Fig. 211) was held in the Conservatory at Miller Park, and Mr. W. E. Tye, the Corporation's Parks Superintendent, has been warmly congratulated upon its success. Upwards of one thousand big blooms of popular exhibition varieties were displayed in addition to many thousands of smaller, decorative and single varieties. The large Japanese varieties, arranged along the centre of the house, were especially fine.

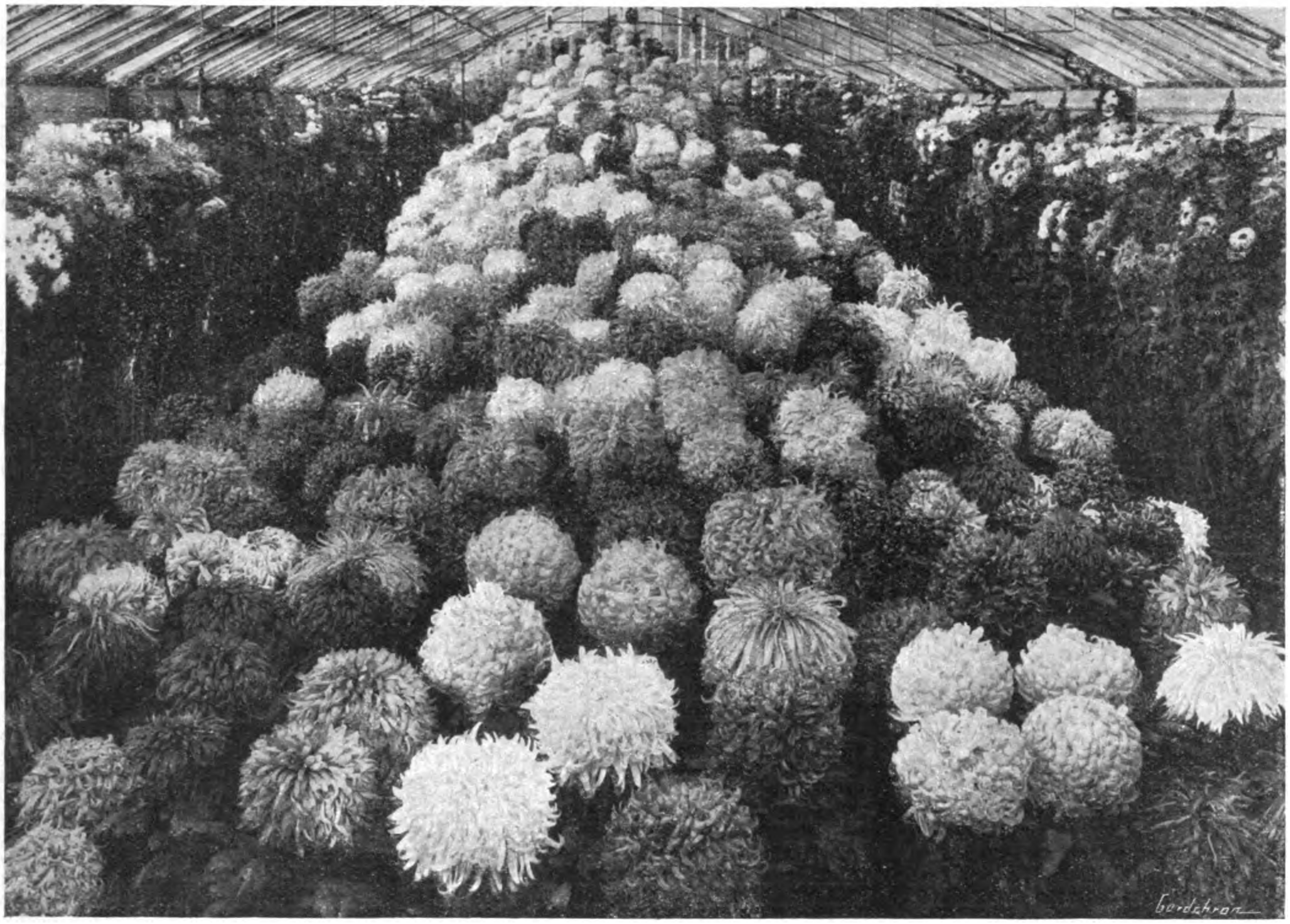

FIG. 211.—CHRYSANTHEMUMS IN THE CONSERVATORY AT MILLER PARK, PRESTON.

Tax Puzzles in Belgium.—English horticulturists who find it tiresome to work out their income tax may read with interest the following questions and replies which appeared lately in a Belgian paper, as showing how much more complicated are the fiscal problems which his unfortunate Belgian confrère has to face:—"I am a jobbing gardener, employing men to prune trees and go round seeing to the gardens of my clients. I am paid by the hour, and I supply the usual plants, bulbs, bedding plants, etc., and any trees required. I make out one bill for the work and another for the materials supplied. What tax is payable before the 21st of June, and what after? I also do work for trading concerns, such as the gas company, the municipality, etc. What would be the tax for that? Then I do florists' work, supply bouquets, cut flowers, pot plants, etc. How much tax must I pay on that sort of business? Sir, I know I am asking a lot, but there you are, none of my friends is agreed as to the amount payable, and I can only be sure of an answer by consulting my favourite paper." The editor of the paper replied as follows:—"The fiscal alterations which came into force in June, 1926, raised the invoice-stamp from one per cent. to two per cent. of the amount. The receipt-stamp is at present F. 0.20 per Fs. 500. Bills which concern only the wages paid to men are subject only to a receipt-stamp, but those which are concerned with the supply of materials and goods have to pay the invoice-tax. If the bill contains both wages and supplies, the authorities may claim the most advantageous tax, that is, the invoice-tax, so that it is better to make out two separate bills. If the bill is rendered to a commercial firm, acting as such, you must affix the proper stamp for the transmission tax. As regards your second question, the situation remains unchanged. For the florists' work, the fundamental rates are the same as for your first query, but then there is also the luxury tax . . . . . ."

Appointments for the Ensuing Week.—MONDAY, DECEMBER 20: Birmingham and Midland Counties Gardeners' Mutual Improvement Association's lecture; Harrogate and District Horticultural Association's meeting. TUESDAY, DECEMBER 21: Winchester Gardeners' Association's meeting.

"Gardeners' Chronicle" Seventy-five Years Ago.—*Fuchsia serratifolia.*—This being a favourite of mine, I am induced to send you my method of cultivating it; during this dreary season (when anything in bloom is desirable), I find it one of the gayest ornaments of the conservatory. At the present time I have many plants in eleven-inch pots, a complete mass of flower, on shoots about six inches long; these have been subjected to the following treatment: Cuttings were struck early in February, and, after being potted off, they were repeatedly shifted into a mixture of equal parts loam, peat, and leaf-mould, with a little silver sand, until about the middle of May, keeping them well-topped; by that time they were nice bushy plants. As soon as the weather permitted, I then turned them into the open borders, where the soil was not over rich, choosing as dry a place as possible, and I took no further notice of them till the end of September, when they began to show their flower buds. I then prepared the same soil for them as before, and carefully lifted them in a close pit for a few days, and syringing them every evening till they recovered from the check they had received, giving air by degrees, till they could be fully exposed. I then placed them in a shady situation until they were housed, which was when the other greenhouse plants were taken indoors. I cut back two-year-old plants as soon as they have done flowering, reducing the ball when they commence growing; I afterwards shift them as they require it, subjecting them exactly to the same treatment as young plants, I find that two-year-old plants bloom more freely than young plants, but the flowers are not so large. Under the above treatment this is found to be a most desirable plant, and it amply repays the trouble expended on it, blooming freely from November till February. I have many times treated Salvia splendens in the same way, and it has continued gay in the conservatory through the winter months. *W. J. Ward, Prospect Hill, Reading. Gard. Chron., December* 20, 1851.

Publications Received.—*Farrer's Last Journey; Upper Burma,* 1919-20, by E. H. N. Cox; Dulau and Co., Ltd., 34, Margaret Street, W.1; Price 18/- net.—*Blumen im haufe*, by W. Lange; Verlag J. J. Weber, in Leipzig; price 18 marks.—*Whitaker's Almanac*, 1927; complete edition, 6/- net; abridged edition, 1/6 net; J. Whitaker and Sons, Ltd., 12, Warwick Lane, E.C. 2.

The Week's Work.

THE ORCHID HOUSES.

By J. Collier, Gardener to Sir Jeremiah Colman, Bart., Gatton Park, Reigate, Surrey.

Lycaste.—The flower buds of Lycaste Skinneri and others of this genus are well-advanced. The plants should occupy an airy position in the Odontoglossum, or cool intermediate house, where they will receive the benefit of all the sunlight available. As the blooms approach their full development drier atmospheric conditions should be maintained in order to prevent them from becoming spotted. Apply sufficient water at the roots to keep the pseudo-bulbs plump. Weakly plants should have the flower buds removed so soon as they appear. The deciduous species, such as L. aromatica and L. cochleata, should be rested so soon as the pseudo-bulbs are fully developed.

Phaius.—These plants are still growing freely. From now onwards until the spring they will require very little water at the roots, and their surroundings should be kept just moist. These remarks apply to such hybrids and species as P. Cooksonii, P. Norman, P. Marthiae and P. amabilis. These Orchids thrive best when placed in an intermediate temperature where they may receive fresh air at all times without being subjected to draughts. The hybrid Phaius are liable to attack by thrips and scale insects which should be kept in check by spraying the leaves frequently with an insecticide.

Peristeria elata.—During the period of growth, this Peristeria, which is commonly known as the Dove Orchid, succeeds best in a stove temperature, but now that its large pseudo-bulbs are fully developed it should be afforded drier and cooler conditions, as it requires a long season of rest to cause it to produce flower spikes. The application of water at the roots should be done with care; they should be kept on the dry side, but not so dry as to cause shrivelling. When in bloom, this species is always of considerable interest on account of the central part of the flower being likened to a dove.

Sobralias.—These strong-rooting plants are growing freely and will need plentiful supplies of water. Any that are approaching a pot-bound condition will be benefited by an occasional application of weak liquid cow manure. It is too soon to remove this year's old flower growths, but so soon as the leaves on the flowering stems begin to change colour, cut them down to the surface roots, and afterwards tie the young shoots clear of each other in order that light and air may pass freely between them. Specimens that have lost their vigour and have become bare in their centres may now be divided and the portions placed singly in smaller pots or several arranged together in a larger receptacle. After root disturbance, water the plants with great care until they have become established, after which they should never be allowed to become dry.

THE KITCHEN GARDEN.

By F. Streeter, Gardener to Lord Leconfield, Petworth Park, Petworth, Sussex.

Cauliflower.—It is advisable to place all Cauliflowers in deep pits with a good ball of soil attached to the roots, and cover the latter with leaf-mould or old soil taken from the forcing pits. Early varieties of Broccoli should receive similar treatment. So soon as the ground is cleared of the crop it should be heavily manured and trenched, ready for spring cropping. If club root has been troublesome give the land a liberal dressing of lime.

Cucumbers.—Fruiting plants will require constant attention. Endeavour to promote a moist atmosphere by damping the bare spaces such as paths, etc., early in the morning, and especially near the pipes, with tepid water. It is not advisable to spray the plants except on very bright mornings, as mildew is apt to be very troublesome in winter. When the roots appear on the surface, cover them with a very light dressing of rich soil, well-warmed beforehand. Use the fruits when they are small and keep the trellis furnished with strong, healthy foliage. Another sowing should be made at the present time to allow the older plants to be cut out when convenient. Use small pots, well-drained, and fill them with the following compost: three parts good, fibrous loam, one part flaked leaf-mould, and one part sand. The soil should be sterilised by baking. Place the seed-pots in a deep box over the hot-water pipes, and cover them with glass. The seeds will quickly germinate, and the seedlings should be removed to a warm bed close to the roof-glass. Very little water will be required by the roots, and what is given should be first warmed.

Potatos.—Where high-class Potatos are required, it is advisable to get the ground trenched and well-manured so soon as possible; by this means good crops may frequently be grown on the same site. Leave the surface of the soil in as rough a condition as possible to allow it to weather, and apply a liberal dressing of lime. Order the seed tubers early to make sure of getting the varieties required. Stand the tubers on end in trays, dust them with powdered lime, and sprout them in a light, frost-proof shed.

HARDY FRUIT GARDEN.

By W. Auton, Gardener to Viscount Elveden, Pyrford Court, Woking, Surrey.

Planting.—Weather conditions have not been helpful in the matter of planting this season. In some cases early planting was difficult to undertake because of excessive dryness of the soil, but during the main season of planting the handicap has been heavy rainfall. Trees which have been heeled in because of these conditions will not suffer, but every opportunity of favourable conditions should be taken advantage of to place them in their permanent positions.

Filberts and Cob Nuts.—These Nuts succeed on almost any soil, but a light or medium, well-drained loam suits them best. The bushes have not made excessive growth this season, but where the branches are crowded, some judicious thinning may be necessary, for it is always wise to keep the centre of each bush well open to allow free access of sunlight. If necessary, the spurs on the main branches may also be thinned or shortened, and any suckers thrown up around the stems should be removed entirely. Nut bushes are frequently neglected where manuring is concerned, but a mulching of dung is of great assistance in keeping them in a vigorous and fruitful state.

Winter Spraying.—This plays an important part in the control of many pests of the fruit garden, and regular winter spraying is an acknowledged necessity in modern fruit culture. The pests vary considerably in their life history, and while the Apple blossom weevil passes the winter as a perfect insect, the Apple sucker does so in the egg state and the Ermine Moth as a tiny caterpillar securely protected under its egg-roof. Winter spraying plays a part in the control of them all, as besides direct attack by spraying, trees with clean bark offer much less hibernating protection. Where lime-sulphur or alkali washes are used it is sometimes advised to defer the operation till as late as dared before the opening of the buds, but where considerable areas have to be sprayed the operator cannot afford to lose any favourable opportunity for doing the work during the dormant season. Some striking results have been obtained from the use of some of the newer tar-distillate washes, and it seems as if the use of these will render the control of many pests more certain than ever, for there seems little doubt that for the destruction of the eggs of aphis and sucker they are highly effective. These preparations should not be used too late in the season, however, as it is essential that the trees should be quite dormant at the time of application.

Scale Insects.—Special measures should be taken to rid trees infested with these pests, as, if allowed to remain and multiply, they quickly undermine the vitality of the tree. Paraffin emulsion is a good remedy, but these insects are not easy to destroy by means of syringing and spraying, and no remedy is more effective than sponging the branches with a strong solution of Gishurst compound. If the material is dissolved in hot water, preferably rain-water, and used while still warm, its efficacy will be increased.

THE FLOWER GARDEN.

By F. C. Puddle, Gardener to Lord Aberconway, Bodnant, Taly-Cafn, North Wales.

Plants in Frames.—Alpine plants which are being wintered in frames, should be afforded as airy conditions as possible. Decayed foliage is likely to cause dampness around the collars of the plants and should be removed. If the pots are plunged in ashes, the plants will require very little water during the next three months, and they should be kept as dry as is consistent with their well-being. Cuttings of Pentstemons Veronicas and similar plants which were inserted during September are now well-rooted, and the young plants should be kept as hardy as possible in preparation for severe weather. On fine, mild days the lights may be removed entirely, but care should be taken to keep the foliage dry, or damping may occur if the frames have to be kept close owing to bad weather, therefore, the plants should not be exposed to rain. Frames containing cuttings of hardy shrubs should still be kept somewhat close for many of the cuttings have only callused and will not produce roots before the spring.

Wall Gardens.—A wall garden is a very useful adjunct to the flower garden, for in it may be grown many plants which are difficult to winter successfully in borders or the rock garden. A formal wall of dressed stones, which has to be planted as it is made, is of little value from a cultural point of view, for replanting in such a wall is very difficult, consequently only long-lived and easy-growing plants, such as may be accommodated in almost any part of the garden are suitable. On the contrary, an informal wall composed of rough or undressed stones may be so arranged that there will be plenty of good pockets and sheltered nooks, which will provide congenial homes for rare and difficult plants. The present is a good time to build the wall, for as it is necessarily built of stones and earth only, it is well to allow the structure a few weeks to settle, and to be tested by rain and frost before the time for planting arrives. The most successful wall gardens are those which are really retaining walls for ground of a higher elevation. Good and interesting plants may be selected for every aspect, but a wall facing west or south-west will provide suitable accommodation for the widest range of plants. It is essential to have a wide base, for the sides should incline inwards slightly to prevent the stones slipping. It is also a good plan to allow a few long stones to run back into the bank to act as tie-pieces and thus give additional strength. Good soil should be used for packing between the stones,

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FRUITS UNDER GLASS.

By T. Pateman, Gardener to Sir Charles Nall-Cain, Brocket Hall, Hertfordshire.

Figs in Borders.—Figs planted out in borders and intended to fruit in succession to those being forced in pots should be pruned and made ready for forcing. Remove all old fruiting shoots that can be spared and train young fruitful wood in their places. Do not allow the shoots to be crowded or they will make spindly

AN EXHIBITION OF PLANTS AT CHISWICK IN 1848.

In *The Floricultural Cabinet* for July, 1848, there is a report, in some detail, of an exhibition of plants held at the R.H.S.Gardens, Chiswick, on June 10 of that year. This particular meeting, held nearly eighty years ago, is of unusual interest, more particularly as an illustration of the great number of species and varieties which were then grown for exhibition. Of these plants a very small proportion is now in general cultivation, but these serve to remind us of those names which were once household words wherever gardening was practised, and some of which should most certainly be honoured so long as gardens exist.

The report states that "plants in pots were not naked, unsightly objects, but handsome, bushy ones, and in profuse bloom according to character. Cut specimens, too, were not only so many brought together, but a nearer approach to perfection in form than we ever recollect previously seeing."

The new plants exhibited on this occasion were by Messrs. Veitch. "A new species of Hoya, from Moulmein. The branches trailing, the leaves small, the flowers borne in umbels (similar to H. carnosa), having eight to ten in each. The blossoms were white, with purple centre, very neat and handsome. Being of a dwarfish habit, it will form a suitable plant for any small department." The species was, I should imagine, H. bella.

This firm also showed Browallia Jamesonii, now very popular and grown under the name of Streptrolon Jamesonii. By Mr. Mylam, Vanda Batemannii. "The flowers are a rich purple outside and golden-yellow within." By Messrs. Henderson, Chironia glutinosa. By Messrs. Rollisson, "a new species of Gompholobium, with smallish, bright yellow flowers." By Mr. Green, a new species of Browallia. "each blossom near two inches across, blue, with a light eye. The plant appeared of a dwarf habit." Of Siphocampylus glandulosus. " three very nicely-bloomed plants were shown. The flowers are two inches and a half long, and of a beautiful rich violet colour. It is very interesting and handsome; a dwarf-growing plant." By Mr. Plant, "Aerides erectum, a very pretty kind." By Mr. Jackson, Erica Aitonia superba.

A space was reserved for fine specimens of rare plants, and here Mr. Mylam staged Gloxinia Fyfiana, with twenty expanded flowers; and G. Teichleri, of a pretty rose colour, with blue streaks and spots.

From Syon House Gardens came Gardenia Stanleyana, with thirty-five flowers; Leschenaultia biloba superba, Abelia floribunda and Ixora coccinea, the last "a large plant with twenty-five fine heads of flowers. It was a magnificent specimen."

In the class for a large collection of stove and greenhouse plants, the exhibitor was, apparently. not asked for any set number, nor is any limitation of space stated; some remarkable collections were exhibited, and Messrs. Frazer, of Lea Bridge, were placed first, some of their best specimens being Polygala acuminata, "four feet across and as high;" Ixora grandiflora, of similar height; "a beautiful Clerodendron Kaempferi"; Coleonema rubra, "three feet and a half high, and covered with pink blossoms"; Sollya linearis, "on a cylindrical trellis, five feet high"; Erica densa; Chorizema varium nanum; Franciscea augusta, "a prettier species than acuminata"; Boronia serrulata, "the yellow-blossomed Gompholobium splendens"; Pimelea Hendersonii; "the useful Sphenotoma gracilis"; Dillwynia rudis and Pimelea hispida.

Mr. Donald, gardener to Mrs. Lawrence, Ealing Park, was placed second, and included, amongst others, plants of Cereus speciosissimus, "seven feet high, and well bloomed." Eriostemon buxifolia, Epiphyllum Jenkinsonii, Dipladenia crassinoda, Xanthosia rotundifolia, Jatropha panduraefolia, Polygala Dalmaisiana, Clerodendron paniculatum, "the red variety of Dillwynia rudis, which is handsomer than the species," a white Stylidium and Tabernaemontana coronaria.

The chief prize for fifteen stove and greenhouse plants was secured by Mr. Green, gardener to Sir E. Antrobus, Bart., Cheam; the second by Mr. Cole, gardener to H. Colyer, Esq., Dartford; and the third, by Mr. Kyle, gardener to R. Barclay, Esq., Leyton.

Outstanding plants in these collections were Aphelexis purpurea macrantha, Leschenaultia Baxteri, Erica Cavendishiana, Stephanotis floribunda, Tetratheca verticillata, Allamanda cathartica, Azalea lateritia, Ixora crocata, Azalea Gledstanesii, Clerodendron squamatum, Mirbelia illicifolia, Erica westphalingia and Euphorbia splendens.

Mr. May, gardener to E. Goodheart, Esq., Beckenham, won the first prize in the class for ten plants. Mr. Taylor, gardener to J. Coster, Esq., Streatham, was second, and Mr. Jack, gardener to R. G. Loraine, Esq., Wallington, was third. A notable plant in Mr. Jack's exhibit was Aeschynanthus javanica.

Orchids were most conspicuous at this meeting, and although lack of space forbids mention of many species shown, I cannot refrain from recording the presence of such well-known growers and exhibitors as Mr. Williams, gardener to C. B. Warner, Esq., Hoddesdon; Mr. Plant, gardener to J. H. Schröder, Esq., Stratford Green; Mr. Bassett, gardener to R. S. Holford, Esq, Westonbirt, Gloucestershire, and Mr. Carson, gardener to W. F. G. Farmer, Esq., Cheam.

An extensive range of genera was exhibited and some now very rare species such as Vanda fusco-viridis and Saccolabium praemorsum. Vandas, Aerides and Saccolabiums were greatly in evidence; a noteworthy plant was Schomburgkia Tibicinis, with a flower spike eight feet in length.

We are still rich in Orchid species, but a variety of reasons have militated against the cultivation of hard-wooded stove and greenhouse plants. One cannot but regret the passing of these beautiful indoor plants, and wish that once again there may be room found for at least a few of these old favourites. *Ralph E. Arnold.*

THE PROGRESS OF ECONOMIC ENTOMOLOGY*.

WITH SPECIAL REFERENCE TO AUSTRALIA AND NEW ZEALAND.

(Concluded from page 475.)

(2). THE CONTROL OF INJURIOUS WEEDS.

We now turn to the second problem, in which the introduced plant, not the insect, is the enemy of man. We have to decide the question whether it is advisable to undertake researches on the lines of introducing insects which will feed upon and tend to check the growth of those plants which, in new lands like Australia and New Zealand, have got beyond the control of man and threaten to swallow up large areas of valuable land.

I think the first point, undoubtedly, must be to insist that the method should only be used where a solution cannot be attained in any other direction. All are agreed that the unrestricted importation of plant-feeding insects into a new country is highly undesirable. The problem awaiting solution must be sufficiently grave in its nature to warrant the attempt being made with adequate safeguards, and under the guidance of the most competent experts obtainable.

We can turn again to the Hawaiian Islands for the pioneer experiments in this direction and learn very valuable lessons from them. The first attempt at biological control of a weed was that made in Hawaii on Lantana. This weed was attacked by the introduction of a considerable number of its natural insect enemies in Mexico. The result has been that it is prevented from seeding and has been successfully restrained from spreading all over the islands. Most fortunately for the experiment, none of the introduced insects have proved detrimental to crops or other cultivated plants, with the single exception of one species which occasionally does slight damage to the Egg-plant or Aubergine. Considering the absence of the safeguards which I have elsewhere laid down as indispensable in these experiments, the result must be considered a lucky one rather than a strict precedent to follow.

Further experiments are now being carried on in Hawaii on the control of Nut-grass by the introduction of certain insect enemies from the Philippines, and also on the control of the Mexican weed, "Pamakani." These are being carried out with good safeguards, and the results will be awaited with much interest.

I now come to the most remarkable attempt so far made in the direction of control of a noxious weed by insects, viz., the Prickly Pear campaign in Queensland and New South Wales. The Prickly Pear (Opuntia inermis) was introduced into eastern Australia long ago as a botanical curiosity, and was even propagated and distributed in pots to visiting squatter's wives. When these ladies tired of it as a pot plant, it was thrown out. But instead of dying, as an ordinary plant would do, it proceeded to take root and multiply exceedingly. The luscious fruit was fed on by many species of birds, and the ripe seeds were carried far and wide in their droppings.

This went on until about thirty million acres of land had been put out of cultivation by the pest, and the rate of increase was about one million acres per annum. Then at last the long-suffering Australian populace raised its voice and demanded that something should be done. A Prickly Pear Board was set up, and the first attempts to control the pest were carried out along chemical lines, resulting in the discovery of certain poisonous gases which could be liberated over the infected areas, destroying the weed. This method, however, failed, as the cost of manufacture and application of the remedy proved too high. Failure also resulted from all attempts to utilise the pest commercially: the water content was found to be exceptionally high, the quality of the fibre very poor, and the fodder value very low. Thus the vision arose of eastern Australia becoming in about a hundred years time a vast desert of Prickly Pear, with a few walled cities alone holding out against it. Then the demand for a remedy became so insistent that the natural prejudice against the introduction of insect enemies was at last overcome, and an organised attempt was made to deal with the pest in this manner.

Professor T. Harvey Johnston took charge of the work, which was later on further advanced under the charge of his original assistant, Mr. W. B. Alexander. These men travelled far and wide in the warmer parts of America to find insect enemies of the pest, and large consignments were shipped to Australia. They were then placed in special insectaries and tested out on all varieties of Prickly Pear and also on a large number of important economic plants.

It is interesting to note, as showing the high degree of specialisation attained by Cactus-feeding insects, that not one of the many species introduced could be induced to feed on any other kind of plant; indeed, a number of the species would only eat a single variety of Opuntia and would not even change to a closely allied and botanically scarcely distinguishable species. A few larvae, faced by the "starvation test," made slight attempts to eat unaccustomed plants, but the result in each case was severe indigestion followed by death.

The first Opuntia-feeding insect experimented with was the Cochineal Insect (Dactylopius indicus). It entirely destroyed some thousands of acres of one species of Prickly Pear, Opuntia monacantha, but was quite unable to feed upon the allied pest Pear, Opuntia inermis. A search was, therefore, made for other species of Dactylopius, and finally Dactylopius tomentosus was found capable of attacking O. inermis. This little insect is now being distributed in enormous quantities through the infested districts, and is doing wonderful work in helping to destroy the pest. Though it does not do equally well in all districts and under all the varying conditions, yet it is now generally admitted that this species will prove one of the chief factors in the control of the pest.

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* The Trueman Wood Lecture, 1926, delivered before the Royal Society of Arts, by R. J. Tillyard, M.A., Sc.D. (Cantab.), D.Sc. (Sydney), F.R.S., F.L.S., F.G.S., F.E.S., C.M.Z.S., F.N.Z.Inst., Chief of the Biological Department, Cawthron Institute, Nelson, New Zealand.

Of many other species studied, the most promising appear to be the large Coreid bug Chelinidea tabulata, the moth Cactoblastis cactorum, and perhaps the large longicorn beetles of the genus Moneilema. Large supplies of these insects are being reared in the insectaries, and it will be interesting to watch the progress of events when they are liberated.

It is of special importance to note that, in spite of the immensity of the insect fauna of eastern Australia, only one enemy has so far made its appearance in the field, viz., our old friend Cryptolaemus montrouzieri, the well known enemy of mealy bug. This lady-bird-beetle has begun to attack Dactylopius tomentosus, but, so far, it has been found that the latter can more than hold its own, as it starts earlier and increases more quickly than its rival.

To sum up, it appears to be the general opinion in Australia that this formidable problem is in process of solution by the biological control gained by insect enemies over the pest.

This brings me logically to the consideration of the problems of weed-control which have brought me to Europe this year. The most pressing of these for New Zealand, and to a considerable extent for Australia also, is the control of Blackberry (Rubus fruticosus). The extent of the infestation in New Zealand may be judged by the saying current on the west coast of the South Island that they have only one Blackberry bush, and that is two hundred miles long. Certain areas in the North Island are almost as badly infested also. Not only does this terrible weed, originally introduced for its luscious fruit, spread vegetatively underground, so that each little plant soon grows into a great thicket, but the introduced European birds, especially the blackbird, feed ravenously on the fruit and so carry the seeds far and wide in their droppings. Nobody who has not seen this pest under the conditions prevailing in New Zealand to-day can really understand the menace that it offers to our civilisation. It seems simple to advocate "closer settlement" and "more careful cultivation," as the best methods of control; but, when you realise the extent and inaccessibility of the vast mountain fastnesses which have been captured by the Blackberry, and from which, with ever increasing vigour it is spread far and wide over the richer lands, you will perhaps understand that the hard-working men who are being driven off their farms after years of toil against this weed demand something more than this kind of advice. The general insistence on something being done has led the Cawthron Institute to consider the taking up of this admittedly difficult problem on the lines of biological control. The chief difficulty is the central position occupied by the genus Rubus in the great Natural Order Rosaceae, to which most of our finest economic plants belong. Thus the risk of damage to other valuable plants is appreciably higher than in the case of Prickly Pear or Lantana, and the safeguards imposed against the chance of such injury must be made correspondingly more severe. We will not even consider the introduction of any insect which is known to feed on plants other than Rubus, and we require very severe testing of these on a long series of native and introduced plants before we can consider their liberation.

Another bad weed which has taken possession of a very large area of ground in New Zealand, and parts of Australia is Gorse or Furze (Ulex europaeus). It is, however, a useful hedge plant, and when young, provides good fodder for sheep; also, being Leguminous, it improves the soil by the formation of nitrogen nodules. The problem of controlling Gorse is, therefore, one of preventing it seeding, as it is the bursting of the seed pods which is the main method of spread of this weed. This problem, I am glad to say, appears to have a fairly simple solution, for there are in England two or three insects which live wholly within the seed-pods of Gorse and Broom, and thus prevent them seeding without doing further injury to the plant.

Ragwort (Senecio Jacobaea) is a poisonous plant which is becoming exceedingly abundant in New Zealand. When this plant is eaten by horses or cattle, cirrhosis of the liver results, ending in death, and no remedy is known for it. The control of Ragwort by its insect enemies appears to be a feasible proposition, and is being undertaken by the Cawthron Institute at the present time.

St. John's Wort (Hypericum perforatum) would scarcely appear likely to people in England to become a weed of importance. Yet it has so increased in size and vigour in parts of Victoria as to become a very serious menace, and the careful study of the possibility of controlling it by insects is one of the tasks which I have undertaken during my present visit. I am glad to say that there appears to be a reasonable prospect of success in this research.

In concluding this portion of my lecture, I would like to emphasize again the Imperial point of view in these researches. There are a large number of weeds introduced into various parts of the British Empire which we tolerate without having much idea of how far they rob us of the products of our labour. It has been calculated on a conservative basis that ten per cent. of the world's crops are lost annually through the depredations of insects. I would like to ask whether anybody has attempted to make an estimate of what percentage of the Empire's crops are lost annually through the encroachments of noxious weeds? Think of the thirty million acres in Australia put entirely out of action by Prickly Pear, and the huge areas of cultivable land in New Zealand now going under the Blackberry and Bracken Fern. Moreover, can we say that any weed, tolerated to-day as of no importance, may not in a few years time become a menace as great as the apparently harmless St. John's Wort?

I declare emphatically that the menace is a most serious one in many parts of the Empire, and that we run the serious risk of being judged a race unfit to occupy these great areas, to the exclusion of other races, if we are going to allow them to go under in the grip of introduced noxious weeds. The position demands the most careful consideration from those in responsible positions. Nothing less than an Empire-wide campaign will, in my opinion, suffice. We in Australia and New Zealand are perhaps more strongly menaced than other parts, but I believe that a careful survey of the entire position should be made, and that the whole Empire should be informed of the result.

MARKET FRUIT GARDEN.

THERE were only five days without rain during November, the total rainfall at my place reaching the extraordinary amount of 8·16 inches, which is the most I have even measured in any month. Yet there was little interruption to work of certain kinds in the open. Very little time had to be spent under cover, most of the heaviest rain falling at night and during week-ends. Planting, of course, was out of the question; but good progress was made with pruning and with the grubbing of trees in over-crowded plantations. The latter job, in fact, was rendered rather easier by the soft and sodden state of the ground, the roots drawing out with less labour than would have been the case if the soil had been dry and hard. The plan of thinning out illustrated in a recent issue (p. 394) answers very well, and should certainly improve the plantations. It seems doubtful whether the second thinning will ever be required, unless it be with such a vigorous variety as Bramley's Seedling.

MOVING LARGE TREES.

In the course of the thinning operations a number of twelve or thirteen-year-old trees of Bramley's Seedling, on free stock, were transplanted. They are so large that, in some cases, only two could be loaded on to a van. For reasons of economy and time, it is impossible, on a fruit farm to carry out such work with the elaborate care that is often given to it in large private gardens. Tying up roots and lifting with a large ball of soil are hardly commercial practices. I have, however, seen trees that had been transplanted with much less care on market places, and with quite successful results. In the case of my trees, as many roots as possible were preserved, but very little soil went with them. I do not anticipate any trouble in getting them to grow in their new quarters, provided they are not shifted by strong winds. Staking seems to be the chief problem. Owing to the size of the roots, it was impossible to drive in a stake first and plant against it, or to get a stake close up to the stem. The plan adopted was as follows: The tree was lowered into the hole and got into the correct position. Then it was laid over to get the head out of the way whilst two stakes were driven in as close as the roots allowed, one on each side of the stem. Planting was then proceeded with, the soil being rammed in where necessary amongst the larger roots and well trampled. To secure the tree to the stakes some wire and old rubber hose were brought into use. A length of hose, just long enough to encircle the stem, was cut in half, and each half threaded on to a piece of wire. The two pieces of hose were then fitted around the stem, the wires being twisted at each end to secure the hose in the form of a circle. The twisting was continued on each side until the wire reached the stakes, the ends finally being taken around the stake and secured. As a result, the tree is held in a circle of hose midway between the two stakes, neither of which it can touch.

TAR-DISTILLATE WASHES.

It is to be hoped that December will give an opportunity to get forward with winter spraying with tar-distillate wash. Many growers have planned to make an earlier start with the work this winter, as last year, some, like myself, were unable to finish all their plantations owing to the forward state of the buds at the end of February. It has been found that the makers' directions to spray only whilst the buds are quite dormant must be carried out to the letter, as there is distinct risk of injury if this is disregarded. Late spraying appears to be particularly dangerous in the case of Plum Belle de Louvain and Apple Beauty of Bath. It is advisable to finish spraying Plums by the middle of January, and Apples by the end of February, although much depends on the district and the season.

The field trials carried out with these washes, reports of which have been published by the Ministry of Agriculture, have taught us much. Considering that the materials are costly, and that there are several quite unreliable brands on the market, great service has been done by publishing the names of brands which have given perfectly satisfactory results. There is no excuse now for any grower who wastes his money by purchasing inferior tar-distillate washes.

We have also learned much from the trials concerning the work which these washes are capable of doing; but there is evidently still more to be found out, because the spraying accomplished rather more in the West Midlands trials than in those carried out in the eastern counties. This suggests that either local conditions or the state of the weather at the time of spraying, or afterwards, may have some influence which we do not yet understand. It is to be hoped that both sets of trials will be continued, but using the washes at the same strengths, and that details will be published as to the varieties treated, the date of spraying and the weather at the time and following. In both cases, however, admirable results were secured. In both districts complete control of aphides on Apples and Plums, and of Apple suckers, was obtained; and caterpillars were very considerably reduced. With regard to capsid bug there was a difference. In the west an eight per cent. solution of tar-distillate gave a marked reduction; in the eastern counties even ten per cent. gave only very slight reduction. It was, however, found, in the latter case, that the pest was much more easily dealt with in spring if winter spraying with tar-distillate had been done, owing to the fact that the leaves were not twisted and curled by aphides. It will evidently not be wise for any grower to rely on winter spraying to give him control of capsid bug; but it will be worth his while to do it because it will make more effective his usual spraying with nicotine and soap wash in the week preceding the opening of the blossom.

In the eastern counties tar-distillate washes gave no reduction of Apple scab or of red spider. I should like to see further tests with these troubles, as I am of opinion that I have obtained results against both. In the case of scab, I have no doubt about it, as half of a small plantation was left unsprayed on one occasion, and no one could fail to see the difference in favour of the sprayed trees. I do not suggest for a moment that tar-distillate spraying gives sufficient control of this disease; but it seems to be capable of doing some good. The age and vigour of the trees may affect the result. In my case, the trees were fairly old and of rather low vitality; and it is quite possible that the well-recognised invigorating effect of the wash was sufficient to enable the trees to resist scab to some extent. In the case of younger and more vigorous trees, this effect might not be apparent. With regard to red spider, I have really no right to make any claim, as no unsprayed trees were left as control. The plantation in question has been badly infested with the pest for some years, and there were plenty of the eggs there last winter. After the spraying there was not enough red spider to affect the trees at all. It should be mentioned, however, that the spraying was done later than I shall dare to do it again in an early spring.

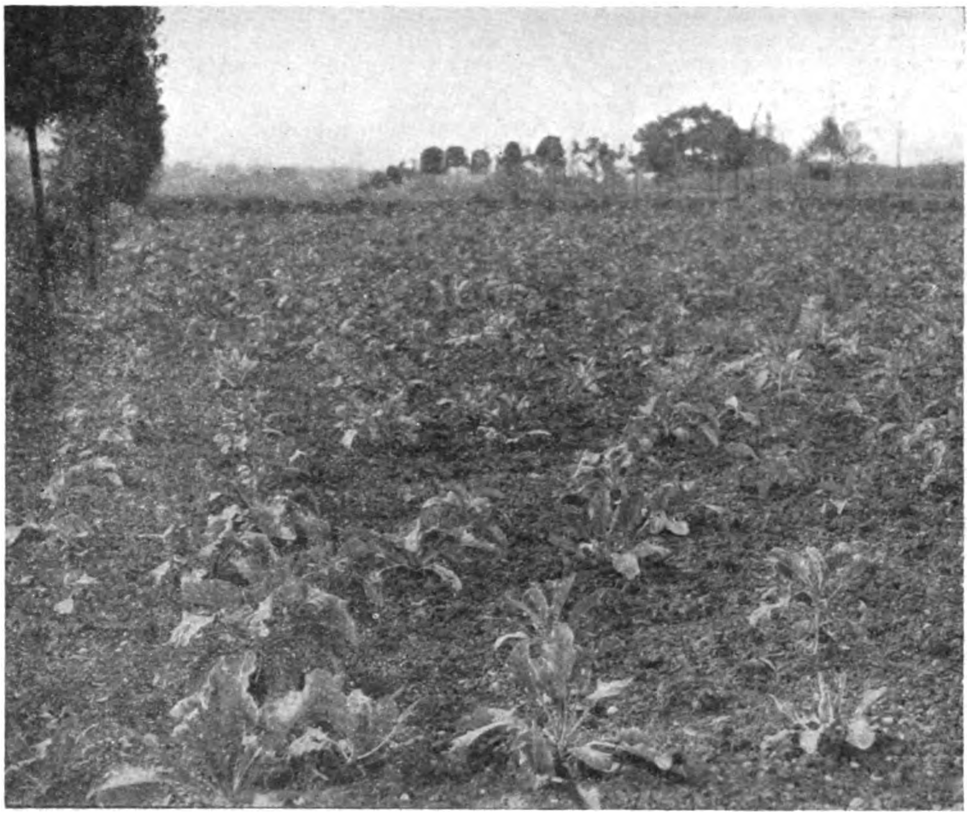

FIG. 216.—LATE BROCCOLI ON DUG LAND AT ALDENHAM.

(see p. 395).

Strength of Wash.

The correct dilution for tar-distillate wash is an important practical point. For reasons of both safety and economy we do not want to use a stronger solution than is necessary. At Long Ashton, as weak a solution as four per cent. gave complete control of aphides and Apple suckers, but was practically useless against caterpillars. As a certain margin of safety is desirable, five per cent should probably be considered the weakest solution to use in practice, even for aphis alone. For Plums it is now generally agreed that six per cent. is most suitable and that nothing stronger is advisable. In the eastern counties trials this gave complete control of leaf-curling aphis and reduced caterpillars by about half. The dilution most commonly used by growers for Apples is seven-and-a-half per cent. This can be thoroughly recommended. As the strength is increased up to ten per cent. the control of caterpillars improves; and it is thought that the optimum effect lies somewhere between five and ten per cent. Unless one hopes for greater control of capsid bug there does not seem to be much object in increasing the strength to ten per cent. It is impossible to get complete control of caterpillars, because some eggs are laid after spraying is done. In a normal season a seven-and-a-half per cent. solution gives sufficient control; and in seasons when caterpillars prove to be exceptionally numerous it is an easy matter to apply arsenate of lead in spring. Personally I shall use six per cent. for Apples as well as for Plums this winter, as economy is desirable after a light harvest. Last year I finished up with five per cent., and even then had no need to do any further spraying against insect pests. Any fear as to injury from repeated use of these washes seems to be dispelled by the experience in Holland, where plantations have been sprayed for fifteen years with nothing but good results. One could wish, however, that tar-distillate were not such an efficient worm-killer. Thousands of useful earthworms are sacrificed every year when the wash is applied.

Grease-Banding.

Banding with grease directly on to the bark of the trees has never been advised, except in the case of old trees with deeply furrowed bark; but there is at least one preparation which is said to be safe. Some seven or eight years ago, when winter moth caterpillars were exceptionally numerous, I did band many of my trees without using any paper. Apparently no harm resulted. Recently, however, I was marking some trees to be grubbed by slicing off strips of bark. I found that, in the case of the Apple Beauty of Bath, the bark under the old mark of the grease band was brown and dead. The injury did not extend through to the cambium, but it cannot have done the trees any good. So far, I have not discovered similar injury on other varieties. This is one more example of the tenderness of Beauty of Bath. Fortunately, grease-banding may be considered out-of-date now that we have tar-distillate washes. *Market Grower.*

SUGAR BEET CULTIVATION IN SCOTLAND.

A highly valuable and instructive report on the growing of Sugar Beet in Scotland has just been issued by a representative committee appointed to examine the possibilities of Sugar Beet growing in the northern counties of Scotland. To the struggling husbandman, the vista opened up to him through the growing of Sugar Beet is lucrative in the extreme—an average profit of £8 10s. 0d. per acre seems an El Dorado in these days—but the report wisely deprecates a sudden rush to grow Sugar Beet.

Caution is the ruling note given by the committee, whose mandate was to examine the possibilities of the industry in the north, and report what steps, if any, should be taken to encourage the industry, and also whether it would be possible to secure the erection of a factory in Aberdeenshire. Composed of leading agriculturists, their report shatters the general notion that farmers lack business acumen. Carefully indeed have they weighed "for" and "against" and the character of alternative recommendations is not unfit to rank as a guide for other branches of industry. How meticulously the calculations have been made may be gathered from the following table showing the average cost of growing an acre of Sugar Beet in the north:—

		£	s.	d.
Rent...		1	0	0
Rates		0	1	8
Carting and spreading 16 loads dung		0	13	6
Value of dung		2	8	0
Ploughing		0	15	0
Grubbing		0	5	0
Fine harrow		0	2	6
Double harrow		0	1	10
Chain harrows		0	1	3
Gathering weeds and carting ...		0	2	0
Light drill		0	5	0
Rolling		0	1	3
Sowing		0	2	0
Rolling		0	1	3
Sowing manure		0	1	6
Cost of Manure—				
2 cwt. sulphate of ammonia ...		1	6	0
2 cwt. super phosphate... ...		0	6	6
3 cwt. potash salts		0	13	0
2 cwt. gr. mineral		0	6	0
Cost of seed (16lb)...		0	8	8
Skimming		0	3	6
Singling		1	10	0
Skimming 4 times, twice 8 drill skim.		0	10	6
Second hoeing		0	10	0
Pulling, heading, and carting ...		2	16	0
Driving to station		2	0	0
Implements...		0	15	0
		£17	6	11
Deduct half dung...	£1 4 0			
Part artificials...	0 12 9	1	16	9
		£15	10	2
Add—10 cwts. lime, if required, and charge half cost ...		0	17	6
		£16	7	8

Value of man calculated at 7s. per day.

Value of horse calculated at 3s. 6d. per day.

The committee also draw attention to the fact that nothing is deducted for the cleaning operations, which would benefit the whole rotation.

The average weight of clean Beet produced by eight growers whose farms came under review, was 9 tons, 16 cwts. 2 quarters per acre. Sixteen samples showed an average sugar content of seventeen to twenty-five per cent. Nine growers averaged £24 17s. 7d. per acre. The prices received ranged from £19 18s. 5d. up to £31.

After examination of the crops, keeping in view the cost, the committee came to the conclusion that the growing of Sugar-Beet is a feasible proposition in a number of districts. There are, however, some failures that require explanation, and the committee urge caution in the signing of contracts for more than one or two acres in the first year. In the first trial, ten hundredweight of lime per acre should be applied to the greater part of the crop, as undoubtedly some of the failures were due to the lack of it. They recommend that, in view of the low prices current for the cereal crop, part of the Sugar-Beet should be taken in place of that crop. A gross income on the best land of £10 an acre in Oats should be raised to about £20 in Sugar-Beet. The committee do not hesitate to say that where the work of one to five acres could be undertaken without materially increasing the existing staffs, then Sugar-Beet growing would be most profitable.

The committee conclude by suggesting that a effort be made to get 1,000 acres of Sugar-Beet in Aberdeenshire in small lots in 1927. It is most unlikely that any one county can get a factory to itself. In the event of a large increase in 1927, and if profitable crops are grown, the Aberdeen County Executive will join with the Morayshire, Banffshire and Kincardineshire County Executives in pressing for the erection of a factory to take the 1928 crop.

Summed up, the committee appear quite convinced that where the farmer conducts the experiment with knowledge and good husbandry he has the prospect of an average profit of £8 10s. 0d. per acre.

VEGETABLE GARDEN.

THE VALUE OF DEEP TRENCHING.

A well-known advertisement informs us that "Every picture tells a story," and the two accompanying illustrations carry this statement to a very logical conclusion. For many years I have advocated deep trenching, no matter what the soil and sub-soil may be, and have practised what I have advocated for a period of upwards of forty years on the heavy, tenacious soil, largely London clay, with which we have to deal at Aldenham. Hitherto I have not had the opportunity of illustrating the advantages and disadvantages of trenching, consequently the present one was too good to miss.

The illustrations are of two batches of late Broccoli. The first batch (Fig. 216) was planted about a week before the second, on ground that had been merely dug over to the depth to which the tines of the fork could penetrate; the second (Fig. 217) and last planted, is on the same kind of ground, but on an area that had been trenched to a depth of three feet. The first batch (those on the dug ground) has had to struggle for existence, and the growth is poor and miserable as compared with the progress made by the plants in the other batch, which, planted on the trenched ground, became established at once, progressed steadily, and are now, at the time of writing a fine, healthy, flourishing lot. Nothing was worked into the soil at trenching time other than garden rubbish, nor have any artificial aids been afforded, therefore the marked contrast substantiates the advice that deep trenching should be resorted to always.

Three feet is not an unusual depth for trenching at Aldenham, on the vegetable grounds, of which there are several, and the stiffer the ground the more we break it up by this method; indeed, we have, on occasion, trenched so much as four feet to four feet six inches deep. I am quite confident that the results attained are profitable even having regard to the extra labour employed, and the present instance justifies that confidence. Afford the plants proper root-run and good results will follow; no matter what kind of sub-soil is brought up to the top, if the impoverished top-spit is buried, there will the finest results accrue. When ground begins to get really impoverished after deep tillage, then is the time to add extra food material at trenching time. I should like both adherents to my trenching methods, and the opponents, to see the above plots, and if any such would like to come along to Aldenham now, they will be welcomed and afforded the opportunity to view the results with the plants actually growing side by side. I feel that all who come will favour deep trenching. *E. Beckett.*

CAULIFLOWERS.

Young Cauliflowers intended to be wintered in cold frames for removing and planting out in spring to give an early supply of curds should not be coddled in the least, otherwise many of the more forward plants will "button" in the spring. An abundance of air should be admitted at all times when the weather is in the least favourable. Early Erfurt is a capital variety for this purpose, although there are other favourites excellent for wintering both under hand-lights and in frames. Some growers depend for their first crop on plants raised under glass in spring, and with due care and attention the results are excellent. I, however, still adhere to the former method and am well pleased with the results. *H.*

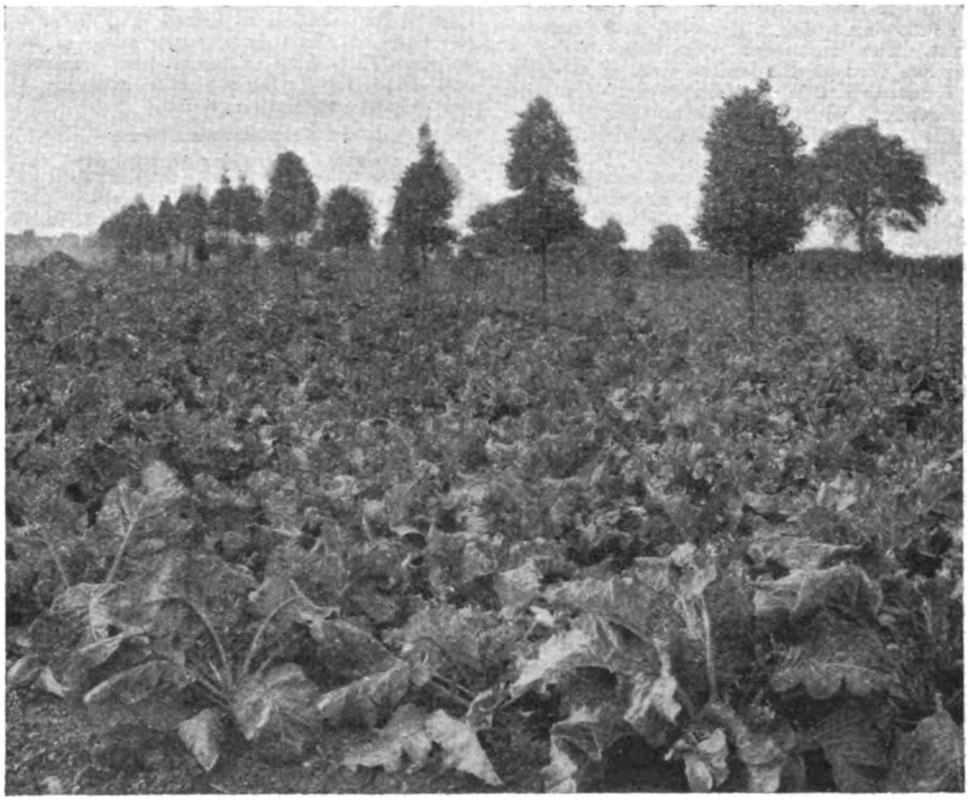

FIG. 217.—LATE BROCCOLI ON TRENCHED LAND AT ALDENHAM.

BLACK-LEG DISEASE OF POTATO.

(Bacillus atrosepticus, van Hall.)

The bacterial disease, black-leg disease of Potato began to attract attention in this country round about 1910. Massee states:[*] "This disease is due to a bacterium called Bacillus phytophthorus. It has been known for some time on the continent, but, fortunately, it is as yet rare in Britain; there is reason, however, to fear that it is spreading with us." The name B. phytophthorus seems to have been used to describe the organism causing black-leg down to the year 1917. A report of the Ministry of Agriculture states:[*] "Black-leg (Bacillus phytophthorus, Appel, and allied forms).—This appeared to have been more destructive in 1917 than usual. It was reported from Lancashire, Yorkshire, Lincolnshire, Suffolk and Surrey, and Carnarvon and Anglesey in Wales. Specimens were also received from Scotland and Ireland. At Leeds it was stated to be one of the commonest diseases in the neighbourhood and from near Preston an extensive outbreak causing considerable loss of crop was reported."

Another report, published a year later, states: [†]"Black-leg (Bacillus atrosepticus, van Hall).—This disease was commonly reported, and was at least as destructive as in 1917, although still sporadic in the crop. It was reported from practically all over the country. Scotch and Lincolnshire seed was affected equally with local seed." Since 1918 the name B. phytophthorus appears to have been dropped, and B. atrosepticus is the name now used for the organism causing black-leg disease.

The disease begins to show its presence quite early in the season and plants affected at an early stage are stunted in growth and have a characteristic pale colouring. If plants become infected when they have almost completed their growth the above symptoms do not appear; in this case the growing points of the stems take on a curious stiff attitude and have a pinkish-red colour. The most familiar symptom of black-leg is the collapse of the stem of the Potato at ground level. In wet seasons the rotting of the stem, from the old tuber to the portion above ground, is rapid and the attacked stems fall over and the decay of the whole top is completed lying on the top of the soil. In dry seasons, the attacked plants do not fall over, but wilt, shrivel and finally die still standing more or less upright. Another feature of the disease is that when there is more than one stem to the plant, often only one stem at the time shows the attack of the organism, but eventually the complete plant goes under. If an infected stem be pulled out of the soil and examined it will be found that the decay begins, in many cases, at the portion nearest the old tuber. In dry seasons the dead stem remains hard and dry, but in wet seasons the stem is soft and inky black in colour.

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[*] *Diseases of Cultivated Plants and Trees*, by G. Massee, p. 514. Pub. 1910.

[*] *Miscellaneous Publications*, No. 21. Board of Agriculture and Fisheries. Page 12. Pub. 1917.

[†] *Miscellaneous Publications*, No. 23. Board of Agriculture and Fisheries. Page 26.

There is some difference of opinion as to whether land which has borne a diseased crop would infect a crop of Potatos the following year. Some accounts of the disease state that the organism would be present in the soil and would be able to infect "new seed" planted the following season. It has been proved beyond all reasonable doubt that if a Potato plant is attacked fairly late in the season the organism gets into the tubers. Under certain conditions the organism becomes more or less dormant through the winter months, but if the infected tuber be used for "seed" the following spring it gives rise to a black-leg plant. The statement that the organism can live through the winter, free, in the soil, has never, I think, been proved. My own observations of the disease in the field does not lead me to think that there is much danger of soil infection. I have noticed patches of black-leg and marked the areas, have planted new seed of the same variety the next season, and have seen no sign of the disease in the marked patches. On the other hand, I am tempted to think that the disease does spread from diseased to healthy plants during the actual growing season. If plants showing the early stages of black-leg be lifted and destroyed at once, the disease rarely causes any more trouble that season. Delay in the removal of diseased plants always results in the gradual spread of the disease on all sides of the diseased plants. It has been stated that black-leg spreads during the growing season by biting insects feeding first on a diseased plant and then going on to a healthy one; this may be true, but in the cases I have been able to examine, the spread of the disease has looked more like a gradual spread of the organism through the soil, rather than being carried by insects. Plenty of water in the soil appears to be the chief factor which aids the spread of black-leg during the growing season.

Black-leg often causes considerable loss in Potato stores during winter. It has been stated *" Black-leg is well known as the cause of rotting in stored Potatos. The disease had not been observed by the farmers in the fields from which these crops had been taken, but this signifies little, since it is well-known that a late attack of black-leg will not show itself to any very obvious extent in the "tops," and the presence of the organism in the tubers can only be recognised by cutting the tuber longitudinally through the "heel." It appears that under certain conditions slightly affected tubers collapse during storage and set up serious rotting conditions in the store.

As a side issue in another experiment I have noticed that if diseased tubers are cut longitudinally through the "heel," into two "sets," one can be sure of getting two diseased plants. Further, I have always noticed when I have planted cut sets in experimental plots that if black-leg appears at all, the number of plants are always even numbers either two, four, six or eight, never one, three, etc. If these plants are lifted so soon as detected, black-leg has not caused any more trouble that season. If not lifted, the disease spreads gradually throughout the season. Therefore I am inclined to think that black-leg can be best controlled by examination of the growing crops, early in the season. The removal of the diseased plants at this stage appears to arrest the damage caused by black-leg. *Somerset.*

PUBLIC PARKS AND GARDENS.

Owing to the refusal of the Ministry of Health to sanction the expenditure necessary for the carrying out of the scheme for the new riverside Park, Cheltenham, in its entirety, several features were, for a time, abandoned. Now, however, through the munificence of ex-Alderman W. H. Horsley and the owners of the land it will be possible to include the features and carry out the original plan.

If Mr. D. H. Maclaren's plans are accepted, the Brighton Corporation will, ere long, carry out a great scheme of reconstruction at Preston Park. One of the suggestions is the formation of a wide boulevard around the park and the removal of the railings. Other plans provide for a lake six acres in extent, with a series of terraces leading down to it; for a Rose garden and for extensive sports grounds. The estimated cost of the entire scheme is £50,000, and much of the work would give relief to many at present unemployed.

The Ministry of Health has made an enquiry into an application by Keynsham Parish Council for sanction to borrow £4,150 for the purchase of about twenty-two acres of land between Keynsham Church and cemetery, and £350 for laying-out and adapting the property as a recreation ground.

HOME CORRESPONDENCE.

Biennial Cropping of Apples.—Mr. J. Wilson, in his article on the Apple crop of 1926, p. 455, suggests that is is a natural tendency of the Apple to crop biennially. I entirely disagree with such a theory, but I admit that if biennial cropping once becomes a habit it is very difficult to check, even with drastic thinning. Young trees, if well-thinned every year from the start, bear good crops annually, provided they are not damaged when in flower, as was the case in 1926. If Mr. Wilson cares to examine fruit blossom after frost, if there is sufficient to cause injury, he will see that the pistils and stigmas of all open flowers are blackened, although there is otherwise no apparent harm done to the flower. If the thermometer in the screen falls below 25° during the flowering period there is always damage, and if rain wets the blossom, and the weather afterwards clears up and frost occurs, as often happens in spring, the blossoms will be damaged. Some of the varieties he mentions as cropping this year are nothing to go by. I have known Seaton House, Frogmore Prolific and Hawthornden to fruit every year until they cropped themselves to death. Stirling Castle will do the same if left to itself. I have noted, on examining blossom after a bumper crop the previous year, that many of the flowers are without pistil and stigma, and therefore could not set fruits. *Grigor Roy.*

Planting Bulbs.—Mr. Harrison's method of planting bulbs in beds amongst carpeting plants is unworkmanlike and unheard of in all my experience. To plant a large bed with bulbs and mark them with stakes would mean tripping over or treading on the stakes when putting in the other plants. The most satisfactory method, if the bed is a large one, is to have both plants and bulbs at hand and plant both at the same time. I do not approve of using a dibber, a trowel is the most satisfactory implement to use. *Grigor Roy.*

Thompson's Pear.—The above spelling is, I think, correct, for the following reasons: When Sabine named the Pear it was as "Thompson's Pear," and not as "Thompson" or "Robert Thompson." It was always referred to by writers of the period as "Thompson's Pear," and Robert Thompson himself always adopted the spelling with the possessive "s." A letter which he wrote to Decaisne on September 7th, 1863, makes these facts quite clear, and in French the Pear is known as "Poire de Thompson." In later years the word "Pear" was dropped very much as, for instance, White's Club is now known as White's. *E. A. Bunyard.*

SOCIETIES.

SCOTTISH SEED AND NURSERY TRADE ASSOCIATION.

Following the annual business meeting, at which the officials were reappointed, the members of this Association to the number of fifty attended the dinner held in the North British Hotel, Edinburgh, on Wednesday, December 1. Mr. David Bell, president, occupied the chair, and the croupiers were Messrs. William Fyfe, Thomas Thomson and John Cairns.

After the usual loyal toast had been given from the chair, Major W. Harcourt Webb, Stonebridge, proposed the toast of the Scottish Seed and Nursery Trade Association. He said that the seed trade in Scotland always appeared to him as a very great industry compared with that in England. No wonder it was so, for many of the leadinghouses and leading brains were congregated by the two leading waterways, and were, therefore, in a better position than the seedsmen in the south. They had experienced bad trade during the past three or four years, and, in his opinion, they had not been sufficiently rewarded for their work. He was, however, hopeful that a good time would come and the Scottish members of the trade would probably feel the improvement before the English.

Mr. William Cuthbertson, whose name was coupled with the toast, stated that the great success of the Association, was due to the fact that they had never changed their office-bearers during the nine years of their existence, and so long as Mr. Bell was at the head they would go on prospering. The speaker then announced that he was going to take the company round the world in twenty minutes, and proceeded to give a brief and racy itinerary of his recent visit to India, Australia, New Zealand and America. He recounted some of the outstanding incidents of the trip and introduced the names of the leading members of the trade whom he had met. In New Zealand he saw wonderful Sweet Peas, ten feet high, and as the growers did not know how to take the plants down when they reached that height they added ten-feet supports and used ladders. At Brisbane, he met an interesting personality in Tommy Wood, a leading seedsman, and was introduced to the Home Secretary and Judge Brennan. From Queensland, he proceeded to San Francisco via Borneo, Manilla, Hong Kong, Shanghai and Japan, and was met at the Californian port by his son Frank, his wife and family. That young man was sent out fourteen or fifteen years ago for two years' experience and never came back, as he was now one of the Directors of Messrs Morse and Co., who controlled six thousand acres. The biggest field in that nursery contained 120 acres of Scarlet Globe Radish. When visiting Messrs. Bodgers' ranch near the southern boundary of California, he enjoyed a trip across the Mexican border one Sunday and saw one thousand motor cars belonging to Americans who had gone to Mexico to get a drink. On that occasion he desired a soft drink, but the stock of the establishment consisted of a half-bottle of ginger ale. After visiting Vancouver, the homeward journey was continued across the Rocky Mountains to Chicago, where he was introduced to Mr. Ball, who had made the Scotch Mangold famous in America. At Detroit, he saw the biggest seed warehouse in the world, belonging to D. M. Ferry and Co. The floor space covered eighteen acres, and there were 100 travellers on the road. Niagara, New York and Philadelphia were visited in turn, and in summarising his impressions, he placed New Zealand first, Victoria, B.C. second, and California, third. The Americans were going at top gear all the time, but they were hospitable and as good companions as one could wish.

The remaining toasts consisted of the "Agricultural Interests" proposed by Principal E. Shearer, College of Agriculture, Edinburgh, and responded to by Mr. A. Batchelor, president of the National Farmers' Union of Scotland;

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* "Decay in Potato Clamps due to Black-leg," by S. G. Paine and C. M. Haenseler, *Journal of the Ministry of Agriculture.*, vol. 27, p. 78.

"Our Guests," proposed by Mr. A. Chalmers and acknowledged by Mr. George P. Milne; and "The Chairman," proposed by Mr. Thomson, president of the Royal Caledonian Horticultural Society.

ROYAL HORTICULTURAL.

December 14.—On the occasion of the last meeting of the year the R.H.S. Hall, at Vincent Square, Westminster, was pleasantly filled with exhibits. Orchids were shown in quantity and of considerable merit. A very seasonable collection of berried trees and shrubs was displayed by the Hon. Vicary Gibbs, and there were also collections of Chrysanthemums and Carnations for the attention of the Floral Committee. There were no exhibits before the Fruit and Vegetable Committee. Various collections of horticultural sundries and artistic exhibits helped to fill the hall.

Orchid Committee.

Present: Sir Jeremiah Colman, Bt. (in the chair), Mr. Gurney Wilson (Hon. Sec.), Mr. H. T. Pitt, Mr. Fred J. Hanbury, Mr. S. W. Flory, Mr. Charles H. Curtis, Mr. Fred K. Sander, Mr. H. G. Alexander, Mr. J. E. Shill, Mr. J. Cypher, Mr. Henry H. Smith, Mr. A. McBean, Mr. John Cowan, Mr. Robert Paterson, Mr. Richard G. Thwaites, Mr. S. Armstrong, Mr. E. R. Ashton, Mr. J. Wilson Potter and Mr. Stuart H. Low.

First Class Certificate.

Odontonia Nesta, Stamperland var. (Odontonia Gladys × Odontonia St. George)—A brilliant and handsome hybrid, with flowers so large and substantial as those of a big Odontoglossum, but with the lip giving evidence of Miltonia parentage. The sepals and petals are bright chocolate red, but the colour is broken up by narrow, pale, rose-coloured areas; the lip is of deeper red, almost crimson, and the disk is deep orange-yellow. Shown by Mr. Robert Paterson, Stamperland, Glasgow.

Awards of Merit.

Cypripedium Bendigo (Niobe × Bronzino).—A very bright and attractive hybrid, of good form but not so big as many modern sorts. The dorsal sepal is heavily stained with deep reddish rose on a paler ground, and is green at the base, and has a dark rose-red median band. The sepals are green and brown, as also is the lip. Shown by Messrs. H. G. Alexander, Ltd.

Vuylstekeara Merola (Miltonia Charlesworthii × Odontonia Hemera).—A charming little hybrid with shapely flowers of rosy-crimson colour, but with paler staining at the apex of the wide lip. Shown by Messrs. Charlesworth and Co.

Groups.

A large, bold and attractive group of Orchids was admirably staged by Robert Paterson, Esq. (gr. Mr. Arch. Merry), Stamperland, Cathcart, Glasgow. The central feature was composed of handsome spikes of flowers of Vanda coerulea, Miltonia Wm. Pitt, Cymbidiums and hybrid Odontoglossums, all in fine condition. The bulk of the display consisted of Cypripediums, and these were mostly represented by goodly plants carrying several blooms, notable sorts being C. Earl King, C. Lord Wolmer, C. Sir J. M. Barrie, C. Christmas Cheer, of very fine colour, C. Albert Fisher, C. Fantasia, C. Boltoni and C. Cyclops. Other good things were Brasso-Laelio-Cattleya Penelope, Stamperland variety, a splendid form of Oncidium varicosum Rogersii, and O. Forbesii. Mr. Paterson was heartily congratulated upon his success (a Gold Medal was recommended) by numerous enthusiasts, who greatly admired his pluck in bringing valuable Orchids so long a journey.

Capt. Drummond (gr. Mr. Leslie Smith), Cadlands, Southampton, contributed a large group of Cypripediums, the majority of the plants being of good size and carrying numerous flowers. C. insigne Sanderae, C. Dreadnought, C. insigne Harefield Hall, C. Actaeus var. Bianca and C. Arachne var. Sunset, were all well represented, and these were associated with C. Alliance, C. Icarius, C. Earl Tankerville, C. Alcibiades var. Illustris, and fine spikes of Cymbidium Madeline at each end of the group. A fine exhibit to bring from so great a distance.

The brilliantly-coloured Laelia anceps var. G. D. Owen was conspicuous in the interesting exhibit from Messrs. Sanders, which also included large flowers of Cypripedium Memoria Ogilvie var. Conynham, C. Antinous, C. Cappa Magna var. J. Thrower and C. Alcibiades var. Illustris. Species were represented by Coelogyne Rhodeana, Odontoglossum Rossii majus, Bulbophyllum cupreum, Maxillaria picta and Paphinia cristata.

A large exhibit from Messrs. Cowan contained some capital examples of Cypripedium Odin, C. Martello, C. Earl Tankerville, C. Perseus, C. Fantasia of immense size, C. Cyclops, the handsome C. Cardenoma, C. W. H. Page, C. Yadie and C. Vega, the last showing pleasing evidence of its descent from C. Fairrieanum. Cattleya amabilis and Sophro-Laelio-Cattleya Magnet were also finely shown by this firm.

Messrs. J. Cypher and Son exhibited a very effective group of Cypripediums in which we were particularly attracted by C. Ballet Girl, C. Goliath, C. Madame Jules Hye, C. Niobe superba, C. Harri-Leeanum, of rich deep colouring, C. San-actaeus, C. Mirum, C. Leeanum var. Gratrixae, C. L. Clinkaberryanum and C. Corsair. In Messrs. Charlesworth and Co.'s small exhibit the outstanding plants were of Odontonia Olive var. Argus, Sophro-Laelio-Cattleya Laura (S.-L.-C. Pandora × S.-L.-C. Marathon), and the new Vuylstekeara Merola.

Messrs. A. J. Keeling and Sons contributed a few Orchids, as also did Messrs. Flory and Black, whose Cypripediums were of fine size. Mr. H. Worsley, Stonehouse, Haslington, showed the large Cypripedium Worsleyi, a bold hybrid which had previously received an Award of Merit. Messrs. Armstrong and Brown sent Cypripedium Prince Albert in grand form.

Floral Committee.

Present: Section A.—Mr. Henry B. May (in the chair), Mr. J. F. McLeod, Mr. Arthur Turner, Mrs. Ethel M. Wightman, Lady Beatrix Stanley, Mr. H. J. Jones, Mr. J. M. Bridgeford, Mr. D. Ingamells, Mr. Wm. Howe, Mr. Montagu Allwood, Mr. A. E. Vasey, Mr. Donald Allan, Mr. W. B. Gingell, Mr. James B. Riding, Mr. D. B. Crane, Mrs. Helen Lindsay Smith, Mr. Charles E. Pearson, Mr. W. P. Thomson, Mr. G. W. Leak and Mr. E. R. Janes.

Section B.—Mr. G. W. E. Loder (in the chair), Mr. E. A. Bowles, Mr. F. G. Preston, Mr. Reginald Cory, Mr. Clarence Elliott, Mr. George Harrow, Mr. W. G. Baker, Mr. T. Hay, Mr. Amos Perry, Mr. E. H. Wilding, Mr. W. J. Bean, Mr. James Hudson, Mr. G. Reuthe, Mr. R. C. Notcutt, Mr. W. B. Cranfield and Sir William Lawrence, Bt.

Awards of Merit.

Chrysanthemum Fusilier.—(See N.C.S. Awards p. 499). Shown by Mr. H. Shoesmith, junr.

C. Lavinia.—(See N.C.S. Awards). Shown by Mr. H. Shoesmith.

C. Yellow Favourite.—(See N.C.S. Awards). Shown by Mr. A. G. Vinten.

Groups.

The whole of the end of the hall was filled by the Hon. Vicary Gibbs (gr. Mr. E. Beckett, V.M.H.), Aldenham House, Elstree, Herts., with a magnificent collection of hardy shrubs. Berried species and varieties predominated, and the chief of these were Hollies. At the back there were trees fully twelve feet high, of perfect shape and heavily laden with bright berries. These were principally specimens of Ilex Aquifolium (the common Holly), I. A. Marnockii, a variety bearing medium-sized, rich green, almost spineless leaves and brilliant red berries; Ilex Aquifolium Blood Orange, a vigorous, green-leaved variety, bearing heavy crops of reddish-orange coloured berries, and I. A. fructu luteo, with plentiful clusters of bright yellow berries. There were also smaller, but still large specimens of I. A. argentea medio-picta, I. A. aurea medio-picta, I. A. pendula and I. A. Silver Queen, also heavily fruited. A neat bush of I. A. aurea was well furnished with golden leaves almost entirely devoid of green. At appropriate places in the middle of the group the line was pleasantly broken by tall standards of Cotoneaster salicifolia, C. salicifolia rugosa and C. frigida Vicarii, which also bore large quantities of bright fruits. Along the front of this exceptionally interesting group there were profusely berried branches of the yellow Pyracantha angustifolia and the bright crimson P. coccinea. Other highly ornamental shrubs included a massive example of Hedera dentata variegata, Cornus stolonifera flaviramea, with erect, cylindrical shoots of dull yellow, Cornus sanguinea atrosanguinea, Symphoricarpus racemosus variegatus, weighted down with masses of large, milk-white fruits; Pernettya mucronata varieties, various Privets, Cydonia japonica Wilsonii, accompanied by a number of its very large Quince-like fruits; and a large branch of Mistleto.

In a floor group, the Orpington Nurseries Co. again displayed a collection of shapely little Conifers suitable for the rock garden, with several different Barberries and Viburnum Tinus in flower. Mr. F. G. Wood had a few small Conifers and miniature alpine gardens, while Mr. J. Klinkert had another exhibit of Topiary specimens.

Bright and fresh Chrysanthemums were shown by Messrs. Keith Luxford and Co., and by Mr. A. G. Vinten. Both exhibits were of Singles and Japanese varieties of decorative types. The former included Bianca, light chestnut, December Bronze, Percy A. Dove, white, Golden Butterfly and Balcombe Beauty amongst the Japanese varieties, and Challenger, crimson, with a golden zone, J. Barrell, of similar type, and Sandown Radiance, of the Singles. The chief varieties staged by Mr. A. G. Vinten were Baldock's Crimson, which has long been a favourite rich crimson variety for December flowering, Balcombe Beauty, of similar type but of a lighter shade of colour, the new Yellow Favourite and Golden Butterfly of rich colouring.

There were three collections of fresh and good Carnations. Messrs. Stuart Low and Co. had large vases of Eileen Low, Betty Low, Mauve Queen, Brilliant, Spectrum and Ruby Glow, a new variety of rich fragrance. They also staged plants of Erica melanthera, Hippeastrums and Acacias. Mr. C. Engelmann set up excellent vases of Zorro, a new Fancy of dark heliotrope colour flaked with red; Brenda, scarlet, Red Laddie and Rouge, of brilliant colour. Messrs. Allwood Bros. displayed such varieties as Laddie, Spectrum and Canadian Pink, with many vases of Dianthus Allwoodii. Mr. J. J. Kettle had a number of excellent bunches of Princess of Wales Violets.

The principal exhibits of garden sundries were various tools shown by Messrs. Thos. Green and Co.; secateurs and knives from Mr. Jardine, and garden ornaments in stone by Messrs. Sanders and Co. The most interesting of the many exhibits of paintings was the exceptionally complete set of faithful and artistic representations of British Cyperaceae shown by Miss E. G. Trower.

An unusually comprehensive collection of species and varieties of Polypodium, staged by Mr. Amos Perry, received considerable attention from Fern enthusiasts. The fifty different sorts included the common Polypody, which often festoons the branches of trees in the west of England and elsewhere; such distinct varieties as Polypodium vulgare semilacerum falcatum, which has sword-shaped fronds furnished with pinnae serrated on only one side; P. v. omnilacerum, which is generally entirely serrated, and its fronds are exceptionally long for the genus; and P. v. pulcherrimum, bearing bright green fronds. The forms peculiar to Wales and to Cornwall were also represented by very good specimens.

Fruit and Vegetable Committee.

Present: Mr. C. G. A. Nix (Chairman), Mr. J. Cheal, Mr. W. Poupart, Mr. H. S. Rivers, Mr. G. F. Tinley, Mr. W. F. Giles, Mr. P. D. Tuckett, Mr. A. Poupart, Mr. E. Beckett, Mr. W. H. Divers and Mr. A. N. Rawes.

Mr. Edwin Beckett showed Brussels Sprouts Filbert, a variety with very small sprouts of the demi-nain de la Halle type of the French growers. The Sprouts, although not much larger than Cobnuts, were said to be of the finest quality. Mr. Beckett stated that the plants came absolutely true to type, and he spoke highly of the variety for private establishments.

BRITISH MYCOLOGICAL SOCIETY.

A London meeting was held at University College, on Saturday, November 20, with the President, Dr. G. H. Pethybridge, in the chair.

The first paper was by Mr. W. J. Dowson, who gave an account of an unusual species of Botrytis attacking the leaves of Narcissi. A preliminary account of the fungus was given in *The Gardeners' Chronicle* for July 24. Specimens of Narcissi showing "fire," were obtained from northern Ireland and from Cornwall. All the leaves were marked, generally near the tip, sometimes much lower down, with usually one, rarely two, light-yellow elongated patches one to two inches in length. At the centre of the yellow patches was a small but distinct grey area. The yellow patches, kept damp, produced, after forty-eight hours, fungal hyphae bearing, later, large, globular, colourless spores. The production of conidia on the diseased leaves lasted only for a few days and then ceased: a few sclerotia were produced on all the pieces of leaves. The fungus was easily isolated but formed only sclerotia and microconidia in culture. The spores formed on aerial hyphae on dead tissue are unusually large and germinate after half- to one hour, either in water or in dilute glycerine, producing eventually as many as thirteen germ tubes. The author regards the fungus as a species of Botrytis. It would appear that the fire disease is of wide occurrence, and it probably is to be found in those districts with a relatively high rainfall, *e.g.*, the western portions of the British Isles. Preliminary inoculation experiments pointed to the pathogenicity of the fungus.

Miss A. Lorrain Smith followed with an account of a new family of lichens. In 1877, Dr. Stirton published a description of Cryptothecia subnidulans which has greatly intrigued and puzzled lichenologists. Zahlbruchner, for example, regards it "as imperfectly known and of obscure position." Stirton sat on his specimens in a manner which was as consistent as it was annoying. After his death, his herbarium passed to the Glasgow Museum, and opportunity thus arose for examining his lichens, both British and foreign. Among exotic specimens, Miss Smith found six lichens, four of which she regards as species of Cryptothecia, and for two closely allied forms she proposes to establish a new genus. The two genera apparently form a very distinct and somewhat isolated family. The septate or muriform spores and type of ascus suggest affinity with the Myriangiaceae, a family of fungi which previously were regarded as lichens; the lax peridium of interwoven hyphae resembles that of Gymnoascaceae usually regarded as a primitive family of Ascomycetes; amongst lichens their nearest associates are Thelocarpaceae and Mycoporaceae. In appearance all the species are somewhat dismal—merely an indefinite looking powdery crust occurring on the bark. It is doubtless this unpromising appearance that has led to their being overlooked by practised collectors; Stirton's friends probably picked up anything and everything, and he himself was sufficiently curious to examine what was sent. Most of the specimens were from India, but the family is represented in West and South Africa. There is thus wide tropical distribution, and now that attention has been drawn to the general characters, and proper descriptions are available we may hope for an extension of knowledge, with the probability of an increase in the number of genera and the possibility of some light being thrown on the never ending puzzle of phylogeny.

Professor O. V. Darbishire then read a paper on "The formation of Isidia and Soralia in Lichens." He first described in detail the development of the isidia of Peltigera praetextata. Their origin is endogenous and is due to the activity of special hyphae, which either make their way to the surface of the lichen by breaking through the cortex, or make use of a crack in the cortex caused by some external mechanical agency. Cracks are common in all species of Peltigera, but only in P. praetextata do they normally give rise to isidia. In the other species the wound due to the crack is merely healed up by the growth of medullary hyphae. The mature isidia are very highly developed assimilators. Their structure shows a primary cortex on the upper side, the walls of which have wavy outlines. The secondary cortex is of the same structure as the cortex of the ordinary thallus. The internal tissues show the gonidia fairly closely packed towards the upper cortex with a very loose plectenchyma just inside the lower cortex. This cortex is one layer of cells thick only, and its walls, too, exhibit wavy outlines. They are also interrupted here and there by pores which in external form, at any rate, resemble to an extraordinary degree the stomata of the higher plants. The whole isidium, in fact, resembles in structure, to a remarkable degree, the green leaf of the ordinary land plant. It thus forms a good example of homoplastic development.

The development of the soredia of Pelitigera erumpens was also described. The group of soredia forming the sorral has an endogenous origin. The speaker described in detail the gradual surrounding of a few gonidia by the fungus, then the gradual differentiation of the soredium and its raising to the surface of the soralial tissue, when it ultimately becomes detached, a true reproductive organ. Of special interest is the gradual extension of the air spaces inside the soredium. At first, these air spaces are very small in extent, but they get larger, owing to the growth in length, but not in width, of the intra-soredial hyphae. The air spaces inside the soredium are kept in touch with the outside air by means of minute pores in the outer protective layer of the soredium.

The very regular and uniform development of isidium and soredium afford new evidence of the close co-operation of algae and fungus in the lichen. They act physiologically as one organism, though they may morphologically represent two organisms. They act together as closely as green and colourless cells in an ordinary green leaf. At the same time, it must be remembered that the fungus alone can be the bearer of any lichen traditions as the fungus can live only as a partner in the lichen. The gonidia may be picked up by the lichen fungus at any moment, and as free-living algae may never have been inside a lichen themselves or even any of their ancestors.

After lunch, Mr. Paulson exhibited a specimen of Russula emetica attached to the mycorrhiza of Beech in such a way that no doubts were possible that it was the mycorrhiza of fungus. The specimen had been obtained at Epping Forest during the torrential downpour of the previous week-end, the abundance of rain enabling the easy separation of humus and soil surrounding the connection between mycorrhizal and fungus mycelium.

Mr. W. R. I. Cook then gave an account of the genus Ligniera one of the Plasmodiphoraceae. This fungus occurs in the roots of plants found usually in marshy ground. Several species have been described, mainly on the fact that they occur in different hosts. Cross inoculations were tabulated which showed that several of these must now be regarded as host varieties of the same species. Zoospore formation occurs, and the process of infection of the root hairs by the zoospore has been followed to the production of the spindle-shaped amoeba. The zoospores are apparently the only method provided for the infection of fresh host plants, the spores being the resting stage for tiding over unfavourable weather conditions, and fo propagating the fungus within the cells of the infected plant. Reduction division has been observed at the formation of both spores and zoospores. Conjugation was never seen.

The last paper was by Mr. W. A. Roach, on "The Nature of Disease Resistance in Plants with special reference to Wart Disease of Potatos." After pointing out that immunity from wart disease was an example of physiological resistance, that the evidence available at present points to the conclusion that immune and susceptible varieties form two quite distinct classes and are not end members of a continuous series, and that immunity does not appear to be connected with any other plant property, the lecturer came to the main part of his paper which was the consideration of the results of his grafting experiments and the deductions which might be drawn therefrom concerning the general nature of immunity from, or susceptibility to, wart disease

The reaction towards wart disease of the tuber was unaffected by grafting on either a foliage system, a root system, or of a complete plant of opposite reaction to the disease. From these results it was deduced that immunity from, or susceptibility to, wart disease is innate to the cell, and so is of a different nature from susceptibility to crown gall which Wormald and Grubb have shown to be bestowed on a resistant stock by grafting on it a susceptible variety. Whereas examples of resistance of the crown-gall type may be explicable in terms of such compounds as alkaloids, essential oil, etc., which are known to pass a graft fusion layer unchanged, the cause of immunity from wart disease must be sought in compounds, probably of a more complex nature, which cannot cross a graft fusion layer unchanged and so probably cannot leave the cell at all.

The reasons for thinking that proteins may be the compounds in terms of which specificity in general is explicable were just touched on and the methods at our disposal for detecting small differences in the structures of proteins were referred to.

Discussion followed each contribution, that on the last paper being, as was intended, of considerable length.

READING AND DISTRICT GARDENERS'.

The fortnightly meeting of this association was held on December 6. Mr. F. J. Green presided, and there was an excellent attendance of the members. Through illness, the lecturer appointed for the evening, Mr. E. J. Henderson, Dell Park Gardens, Englefield Green, was unable to be present, and Mr. A. J. Cobb, Lecturer in Horticulture, Reading University, gave a review of the fruit crop in 1926. He said that the Apple crop was the worst in the memory of all present, and gave what, in his opinion, were some of the causes of the failure. Factors governing the Apple crop were the production of fruit buds, spring weather, diseases and insect pests, and the nutrition of the trees by watering and manuring. Comparisons were drawn from the seasons of 1921 to 1926, and many valuable suggestions made.

In the competition for three dishes of fruits there were only four entries, thus showing the scarcity of hardy fruits this season. The first prize was won by Mr. Kitt, Wasing Place Gardens, Newbury; the second by Mr. C. J. Howlett, The Yews, Earley, and the third, by Mr. C. Runge, Penlee, St. Andrews Road, Caversham. In the non-competitive section there were several fine exhibits. A First Class Certificate was granted to Mr. H. Loader (foreman), Aldermaston Court Gardens, for several magnificent blooms of Japanese Chrysanthemums, including Louisa Pockett, W. Rigby, Mrs. G. Drabble, Majestic and Mrs. R. C. Pulling. An Award of Merit was granted to Mr. F. J. Green, for several vases of fine decorative Chrysanthemums; also to Mr. A. R. Kirby, Reading, for three dishes of Potatos. Considering the shortage of the Apple crop, Mr. J. Herbert Benyon, Englefield (gardener Mr. A. B. Wadds), staged a remarkably fine collection of twenty-six varieties of Apples.

LEA VALLEY AND DISTRICT NURSERYMEN AND GROWERS.

At the meeting of this Association, held on the 25th ult., Mr. J. N. Weatherilt, chief engineer of Messrs. Combustions, Ltd., delivered an address on "The Application of Oil Firing to Central Heating Boilers." He said that most boilers at present burning solid fuel could be converted to utilise oil fuel, and that the changing over from oil fuel to solid fuel, on modern and correctly-designed plants, was a very simple matter. Mr. Weatherilt gave details of equipment, automatic controls, supervision, fuel oils and cost.

At the same meeting, Mr. V. B. Harley Mason, of Messrs. Cochran and Co., Ltd., gave a short paper on "Oil Firing as applied to the Growing Industry." He stated that the new system of centralised heating which is now being utilised by growers is pre-eminently adapted for oil firing, and that while oil fuel was not cheaper but dearer than coal, oil had many advantages over coal or coke, for it does away with storage, cartage and the removal of ashes, whilst other points in its favour were ease of control and cleanliness. Oil, moreover, could be burnt smokelessly, which is an advantage to growers.

THE ORCHID CLUB.

At the meeting of the Orchid Club, held on December 10, there was an extensive display of Cypripediums and Odontoglossums, a special feature being the beautiful group staged by Dr. Craven Moore, to which the Silver-gilt Medal of *The Gardeners' Chronicle* was awarded by the Committee.

Premier Diploma.

Cypripedium Athollii (*Luvaine* × *Carola*), a very refined flower of excellent shape and habit. The dorsal sepal, three-and-a-quarter inches across, is flat and slightly incurved at the base, pure white, with a bright crimson median line and basal purple flush; the petals and lip are well proportioned, of a soft green colour shaded with crimson.

Diploma of Merit.

Odontoglossum Torenia, Atholl House var. (*Lambeauianum* × *Aquitana*).—A flower of medium size and good shape; the sepals and petals are bright plum colour with a pale, window-like area in the centre; the lip is flat and well-formed, with a purple blotch and white "windows."

Cypripedium Mulatto var. splendens (*Demeter* × *Shogun*).—A neat, well-balanced, dark-coloured hybrid of the Earl Tankerville type. The whole flower has a ground colour of yellow-green, the dorsal sepal being entirely covered with confluent, dark chocolate blotches, the petals and lip being washed over with a deep sienna-brown colour.

The above plants were shown by Sir William Thom.

Groups.

Dr. Craven Moore (gr. Mr. W. Gilden), showed a magnificent group of superbly-grown and well flowered Cypripediums and Odontoglossums. Among the former were large plants bearing several perfectly-developed flowers of Ballet Girl, Corsair, Westonbirt var.; Minotaur, The Prince, Gwen Hannen Chardwar var.; Burton Lady, Monialis Hilda Sharp, Viking, Roundhead, and General Sir H. Rawlinson. The impression of stiffness usually associated with a large group of Cypripediums was counteracted by the numerous heavy sprays of Odontoglossum, of which several fine varieties were included.

Sir William Thom (gr. Mr. R. Williams) exhibited a group of well-grown Cypripediums and Odontoglossums, including several Odontoglossum seedlings of merit.

A. T. Cussons, Esq. (gr. Mr. A. Dalgleish), showed a large group containing several plants of Cypripedium Dreadnought, C. Kervalle, C. Lucifer, Westonbirt var.; C. Ogilvie, The Premier and C. Baldur magnificum. Several plants of C. sublaeve were also shown.

B. J. Beckton, Esq. (gr. Mr. W. A. Stewart), showed a few Cypripediums. Mrs. Hardy staged Odontoglossum Illustrissimum Shrubbery var. and a fine variety of Mars. F. T. Paul, Esq., showed a few photographs in colour of his own taking, consisting of groups of Cypripedium bellatulum and its hybrids, the colours in which were remarkably clear and accurate.

NATIONAL CHRYSANTHEMUM.

At the meeting of the Floral Committee of this Society, held at the Royal Horticultural Hall, on Monday, December 13, only five new varieties of Chrysanthemums were submitted, but no fewer than four of them were of sufficient merit to receive the highest award.

First Class Certificate.

Lavinia. V. 2a.—A bronzy-apricot variety, with a faint sheen of rose over its broad florets. Although not quite up to the highest standard of form, it is a very attractive variety, and the flowers are carried on stiff stems.

Fusilier. V. 2a.—This is a large Single variety of fine form and substance. The broad, regular florets are rich ruby-crimson, and there is a very narrow zone of bright yellow around the dull yellow disc. These two varieties were exhibited by Mr. H. Shoesmith, junr., Mayford, Woking.

Crimson Conquest. II. 1b.—A neat, reflexing Japanese variety that promises to be very useful for December flowering. The blooms are of fair decorative size, and composed of broad, substantial florets of a rich red bronze hue that appears to be almost crimson when viewed from a short distance and under bright light. The variety is said to carry fifteen blooms per plant. Shown by Mr. H. Woolman, Shirley, Birmingham.

Yellow Favourite. II. 1b.—This is a sport from the popular Favourite and like it, produces some blooms in which the inner florets incurve somewhat, but either in this form or in the more elegant, reflexing Japanese form, it is a charming variety. The colour is clear sulphur-yellow. The flowers placed before the Committee were finely-grown, fresh and clean. Shown by Mr. A. G. Vinten, Oldfield Nurseries, Balcombe.

ANSWERS TO CORRESPONDENTS.

Chrysanthemums Failing.—*W. H.* It is very difficult to state why you failed to get satisfactory results with your Chrysanthemums, as there are many possible causes of failure. For example, too much water in summer may have been responsible, or too little; or the application of manure when the plants were dry at the roots. Taking the wrong bud is often the cause of failure, this usually resulting in the flowers having open centres. Weather conditions may also have had something to do with your failure; there are many complaints of Chrysanthemums being unsatisfactory this season, growers generally blaming the prolonged spell of hot, dry weather. The cultural methods you describe are suitable. By sulphate of alimonia, we imagine you mean sulphate of ammonia. This may be used in the same proportion as nitrate of soda, and on the whole it is a safer manure, although they both require to be used with great care. We are unable to say whether the use of this manure would have been given you better developed blooms or not.

Mealy Bug on Vines and Peaches.—*A. G.* The nicotine soap you mention may safely be used on dormant vines at the strength recommended by the makers, for the destruction of mealy bug. Peach buds are more susceptible to injury by specifics than the dormant buds of vines, therefore reduce the strength for washing these trees and always brush the insecticide upwards towards the ends of the shoots. By carefully looking over the vines when the buds are breaking for any stray insects, the house may be cleared of the mealy bug.

Names of Plants.—*M. K.* 1, Aster erioides; 2, Salvia Horminum; 3, Aster erioides; 4, Tecoma radicans. *A. B. H.* Olearia Traversii; Eschscholzia Stauntonii. *H. T. C.* Pyrus Aria (Whitebeam). *A. E. F.* 1, Myrtus communis; 2, Lonicera japonica var aureo-reticulata; 3, Cotoneaster Simonsii

Ornamental berried Plants.—*C. H.* The berries are of the fruits of Capsicum annuum, of which there are numerous varieties, with fruits varying in size, from your specimens, to huge ones, known as Spanish Bull, Elephant's Trunk, etc. They are largely used for decorative work during the autumn and winter, the fruits often being attached to sprays of evergreens. Grown in pots, the berried plants are very useful for conservatory decoration during the autumn and winter, and for this purpose the seeds should be sown during March in a temperature of 55° to 60°. The young plants should be grown on without a check until they are in six- or seven-inch pots. During the summer the plants should be grown in a temperature of 50° to 55°; they enjoy ample feeding, and should be well-syringed on all favourable occasions as they are very subject to attacks of red spider, and also Begonia rust, or mite. During the summer they will grow and fruit out-of-doors in favoured parts of this country, if planted on a south border, or they may be planted out in cold frames. On the continent they are largely grown and used for culinary purposes. Our seedsmen offer a limited selection of them. If you require a selection of many varieties you could obtain seeds from a continental seedsman. Messrs. Vilmorin-Andrieux et Cie, Paris, stock them.

Sheep and Tree Leaves.—*W. W. S. H.* It is impossible to identify the single leaf in its partially-digested condition, but it is probably a species of Willow. For correct identification twigs as well as leaves should be sent. We have no recorded instance of sheep or cattle suffering injury from eating Willow leaves, but a number of cases show that when the foliage of trees and shrubs, usually innocuous, is eaten in quantity ill effects often accrue.

Removal of Fruit Trees.—*Cheshireman.* The person you refer to in your letter cannot remove the eight fruit trees to his garden unless he is a nurseryman and the trees were planted in the way of his business. Unless this is the case, the general property in the trees is in the landlord and they cannot be removed without his consent.

Communications Received.—J. P.—A. T. H.—A. M.—A. E. F.—D. & C.—N. E. B.—J. B.—H. G. L.—W. H. L.—J. G. W.—R. B. W.—T. E. W.—A. H. N. E. S.—J. A. S.

TRADE NOTE.

It is with much pleasure we learn that Messrs. Sutton and Sons have, as from December 1, 1926, taken into partnership Mr. Martin Audley F. Sutton, the eldest son of Mr. Martin H. F. Sutton. Mr. Martin Audley F. Sutton has studied scientific agriculture at one of the leading British agricultural colleges, and he has also spent nearly three years going through the routine of every department of the Reading business. Since then hehas passed several months in Canada and the U.S.A. studying American business procedure. Mr. M. A. F Sutton is the eleventh member of the family to be admitted into partnership, and the first representative of the fifth generation, since the foundation of the firm.

MARKETS.

COVENT GARDEN, Tuesday December 14th, 1926.

Plants in Pots, etc.: Average Wholesale Prices.

(All 48's except where otherwise stated).

	s. d.	s. d.
Adiantum cuneatum per doz.	10 0	12 0
—elegans	12 0	15 0
Aralia Sieboldii	9 0	10 0
Araucarias, per doz.	30 0	42 0
Asparagus plumosus	12 0	18 0
—Sprengeri	12 0	18 0
Aspidistra, green	36 0	60 0
Asplenium, doz.	12 0	18 0
—32's	24 0	30 0
—nidus	12 0	15 0
Cacti, per tray —12's, 15's	5 0	7 0
Cyclamens, 48's, per doz.	18 0	21 0
Chrysanthemums, in variety, 48's, per doz.	18 0	30 0
Crotons, doz.	30 0	45 0
Cyrtomium	10 0	25 0
Erica gracilis, 48's, per doz.	24 0	36 0
—60's, per doz.	9 0	12 0
—hyemalis, 48's, per doz.	24 0	30 0
—60's, per doz.	12 0	15 0
—nivalis, 48's per doz.	24 0	36 0
—60's „	12 0	15 0
—72's „	8 0	9 0
Hydrangeas, white, 48's per doz.	24 0	30 0
Nephrolepis in variety	12 0	18 0
—32's	24 0	36 0
Palms, Kentia	30 0	48 0
—60's	15 0	18 0
Pteris, in variety	10 0	15 0
—large, 60's	5 0	6 0
—small	4 0	5 0
—72's, per tray of 15's	2 6	3 0
Solanums, 48's, per doz.	12 0	18 0
—60's, per doz.	9 0	10 0

Remarks.—This department should do good business during the next few days, especially in flowering plants. There is a good selection of Chrysanthemums. Ericas are selling in large quantities, and a bigger demand is anticipated this week. Other choice subjects are Azaleas, Cyclamens, Begonias, Marguerites and Primulas. Solanums are also selling freely in 32, 48 and 60 pots.

Cut Flowers, etc.: Average Wholesale Prices.

	s. d.	s. d.
Adiantum decorum, doz. bun.	15 0	18 0
cuneatum, per doz. bun.	10 0	12 0
Asparagus plumosus per bun., long trails, 6's	2 6	3 6
med. sprays	1 6	2 6
short	0 9	1 3
—Sprengeri, bun. long sprays	1 6	2 0
med. „	1 0	1 6
short „	0 4	1 0
Bouvardia, white per doz. bun.	12 0	15 0
Camellias, 12's, 18's per box	2 6	3 0
Carnations, per doz. blooms	3 6	5 0
Chrysanthemums, white, per doz.	3 6	6 0
—bronze „	3 0	5 0
—white, per doz. bun.	10 0	18 0
—bronze, per doz. bun.	12 0	18 0
—yellow, per doz. blooms	3 0	5 0
—yellow, per doz. bun.	12 0	18 0
—pink, per doz. blooms	3 0	6 0
—pink, per doz. bun.	12 0	18 0
—red, per doz. blooms	3 0	5 0
— — per doz. bun.	10 0	15 0
—specimens, per doz. blooms	15 0	18 0
—Single Varieties—disbudded blooms, per doz.	2 6	4 0
—spray, per doz. bun.	12 0	18 0
Croton leaves, per doz.	1 9	2 6
Fern, French, per doz. bun.	10 0	12 0
French Flowers—		
—Acacia (Mimosa), per doz. bun.	12 0	15 0
—Eucalyptus, per pad	5 0	6 0
—Ruscus, green, per pad	6 0	8 0
—Myrtle, green, per doz. bun.	1 6	2 0
—Narcissus, Paper White, per doz. bun.	4 0	4 6
—Solanum berries, 300's, per pad	10 0	12 0
French Flowers—		
—Violets, Parma, per bun.	5 0	7 0
Gardenias, 12's, 18's per box	6 0	8 0
Heather, white, per doz. bun.	6 0	9 0
—pink, per doz. bun.	6 0	8 0
Honesty, per doz. bun.	15 0	18 0
Hyacinths on bulbs, per doz.	12 0	18 0
Lilac, white, per doz. stems	6 0	7 0
Lilium longiflorum long, per doz.	5 6	6 0
—speciosum rubrum, long, per doz. blooms	3 6	4 6
—short, doz. blooms	2 0	2 6
Lily-of-the-Valley, per doz. bun.	24 0	30 0
Marguerites, yellow, per doz. bun.	2 6	3 0
Orchids, per doz.		
—Cattleyas	24 0	36 0
—Cypripediums per doz. blooms	6 0	8 0
Poinsettias, per doz. blooms	18 0	30 0
Ranunculus—		
—double scarlet	4 0	6 0
—white	4 0	4 6
—yellow	8 0	12 0
Richardias (Arums), per doz. blooms	10 0	12 0
Roses, per doz. blooms—		
—Madame Abel Chatenay	3 6	5 0
—Molly Sharman Crawford	4 0	5 0
—Richmond	5 0	7 0
—Golden Ophelia	6 0	7 0
—Mrs. Aaron Ward	3 6	4 0
—Madame Butterfly	6 0	8 0
—Safrano, 24's per packet	2 6	2 9
Smilax, per doz. trails	3 0	4 0
Tulips on bulbs, per doz.	3 0	4 0
Violets	3 0	4 0

Remarks.—Business should show great improvement during the next few days and prices are already firmer for all flowers of reasonable quality. Chrysanthemums have been in more demand during the past week; spray white, pink and bronze have realised better prices; there is a very limited supply of good spray yellow Chrysanthemums. Disbudded blooms of late varieties are receiving attention from buyers, the principal sorts on offer being Cheshunt White, Dove, Christmas Pink, A. Brooker, Nagoya, Exmouth Crimson, Yolande, Edith Cavell, Balcombe Beauty and Amber Bronze. Single varieties are finishing for the season. Richardias (Arums) have increased most in price; Lilium longiflorum has also held its firm price during the past week. More Lily-of-the-Valley has been on offer in excellent condition. Roses have remained fairly plentiful, but supplies were shorter this morning; good yellow blooms are scarce. Trade in Carnations shows little change from last week; the blooms, generally, are good in quality. Hyacinths and Tulips on bulbs are available in limited quantities, also some fine blooms of Poinsettias. With the exception of Smilax, such foliage as Asparagus plumosus, A. Sprengeri and Maidenhair Fern has been in short supply. The consignments of French flowers have been very uncertain and prices have fluctuated considerably, especially for Parma Violets, the value ranging from 5/- to 15/- per bunch during the past week. Single Violets are now arriving in good condition from French growers.

Fruit: Average Wholesale Prices.

	s. d.	s. d.
Apples, American—		
—York Imperial per barrel	20 0	24 0
—York Imperial	20 0	24 0
—Ben Davis	20 0	24 0
—Albemarle	30 0	35 0
—Oregon Newtown	11 0	14 0
— —Winesap	10 0	10 6
—Rome Beauty	9 0	10 0
—Nova Scotian—		
—Ribston Pippin, per barrel	22 0	26 0
—Blenheim Pippin, per barrel	22 0	26 0
—Starks, per barrel	18 0	22 0
—Others	20 0	22 0
Apples, English—		
—Newton Wonder	10 0	14 0
—Bramley's Seedling	10 0	20 0
—Californian Newtown Pippin	10 0	10 6
— —Winesap	10 0	10 6
— —Winesap per barrel	20 0	22 0
Bananas	23 0	32 6
Brazils, per cwt.	30 0	35 0
Chestnuts, Redon, per bag	12 0	15 0
—Italian	15 0	16 0
—Naples	—	21 0
Cob nuts, per lb.	0 6	0 9
Grape Fruit—		
—Blue Goose	25 0	30 0
—British Honduras	—	25 0
Grapes, English—		
—Guernsey Alicante	0 8	1 0
—Gros Colmar	1 0	3 6
—Colmar	1 3	3 6
—Alicante	1 6	3 6
—Muscat	6 0	10 0
Grapes Belgian	1 6	2 0
—Colmar Muscat	5 0	6 0
—Almeria	16 0	30 0
—Algerian Navel, per tray	7 0	8 0
Lemons, Messina, boxes	12 0	18 0
—cases	20 0	30 0
Oranges—		
—Denia	20 0	30 0
—Valencia	18 0	22 0
—Jamaica	21 0	22 0
—Algerian	6 6	8 6
Peaches, Belgian per doz.	8 0	20 0
Pears, English—		
—Belgian Comice, per doz.	8 0	15 0
—Special, per doz.	4 0	10 0
Pears—		
—Californian Comice—cases	25 0	30 0
—Winter Nelis, case	25 0	30 0
—Beurré D'Angou, case	25 0	30 0
Pines, case	20 0	36 0
Walnuts, Grenoble ... bag	11 0	14 0
—Naples, kiln dried	80 0	90 0

Vegetables: Average Wholesale Prices.

	s. d.	s. d.
Asparagus, Devon	5 0	8 0
— —Paris Green	8 0	10 0
Beans—		
—best	4 0	5 0
—ordinary	2 0	3 0
—Madeira	3 0	10 0
Beets, per cwt.	5 0	6 0
Cabbage, per doz.	2 0	2 6
Carrots, per ½-bag	4 0	5 0
Cauliflowers—		
—English, doz.	3 0	6 0
—St. Malo, crate	8 0	10 0
Celery, fans	1 6	2 6
Cucumbers, per doz.	20 0	27 0
French Batavia	2 6	3 6
French Endive, per doz.	2 6	3 0
Lettuce, round, per doz.	1 6	2 6
Mint, forced, per doz.	4 0	8 0
Mushrooms		
—cups	3 0	3 6
—Broilers	2 0	2 6
Onions— Valencia	8 6	10 0
Parsnips, per cwt.	4 6	5 6
Peas, Forced, per lb.	2 0	3
Potatos—		
—King Edward ton	£8,	£9/10
—others, ton	£5,	£7/10
Rhubarb, forced, per doz.	6 0	9 0
Savoys, per doz.	1 6	2 0
Seakale, per punnet	3 0	4 0
Sprouts, Brussels per ½-bag	2 0	5 0
Tomatos—		
—Canary Island	20 0	25 0
—English, pink new crop	8 0	10 0
—pink and white, new crop	8 0	9 0
—Guernsey	3 0	6 0
—Belgium	4 0	6 0
—Jersey	3 0	6 0
Turnips, per cwt.	4 6	5 6

Remarks.—There has been some slight increase in the volume of business transacted during the past week due, doubtless, to the near approach of Christmas. The opening of the Cape fruit season is recorded, and the first shipment consists of Peaches and Plums. Ample stocks of imported Apples from the North American continent are available, and are offered moderately cheaply. A few home-grown fruits of Bramley's Seedling, Newton Wonder and Bismark are being marketed; the first-named variety is, in particular, very popular with the trade. Rather increased quantities of English Cox's Orange Pippin Apples are arriving in the market, and with the demand showing some slackening, the recent high prices have not been maintained. A good inquiry is being experienced for hothouse Grapes, and both English and Belgian produce have sold freely. A large shipment of Pines has been received, and the fruits should be in demand for the Christmas trade. Pears are a firm business, and good English Doyenné du Comice Pears are selling well. Some good Oranges are available form various sources and selling comparatively cheaply. Considering that most varieties of Nuts are not plentiful, the demand for Nuts is only moderate. Hothouse Beans are scarce and the quantities of forced Potatos are also on the short side. A sprinkling of English Tomatos is coming to hand, and well-coloured fruits sell well. The few Cucumbers available sell at comparatively high prices. Cauliflowers from Cornwall, Kent and Northern France are a moderate trade. Salads continue a variable business owing to fluctuating supplies. Increased quantities of Mushrooms are responsible for the slightly easier prices that are ruling A shipment of new Potatos from the Azores sold quite well. Green vegetables are only a moderate business with an improving tendency. The trade in Potatos is firm.

GLASGOW.

The improvement in prices previously recorded in the cut flower market were not fully maintained during the past week. Good quality blooms of Single Chrysanthemums sold freely, but smaller blooms, which were again plentiful, suffered from the absence of buyers. Prices of Susan, Phyllis Cooper and Molly Godfrey ranged from 1/6 to 2/- for 6's; Duckham, 1/- to 1/9; Jean Pattison, Mary Morris and Absolute, 1/- to 1/6; Reginald Godfrey, 1/3 to 1/6; Buck Bee and Lucy Louppe, 1/- to 1/3; and Florrie King, 4d. to 8d. The value of Roses continued firm at 5/6 to 6/6 per dozen for pink, 4/- to 6/- for red, and 3/- to 4/- for white, but Carnations were cheaper at 4/6 to 5/-. Prices for Lilium longiflorum (Harrissii) kept steady at 5/6 to 6/- per bunch; Narcissi were worth from 2/- to 3/- per dozen bunches. Smilax, 1/- to 1/6; and Asparagus, 9d. to 1/6. Berried Holly made 15/- per crate, and Christmas trees sold at 1/- to 1/6 per foot.

In the fruit market a good business was done in American and Canadian Apples, values of which remained unchanged. From now onwards imports will be on a smaller scale, and it is anticipated that dearer prices may be obtained in the near future, especially for fruit in cases. Valencia Oranges are arriving in the Clyde more freely, and counts of 300's brought from 22/- to 26/- per case, and 316's, 17/- to 20/-. Jamaica brands averaged 16/6. Mandarins sold at 16/- to 20/- for 460's, and 1/6 to 2/6 per tray. Grape Fruit was in small demand round 20/- per case, and Palermo Lemons were worth 21/- for 300's. Californian Winter Nelis Pears of good quality made 14/- per half-case; Washington, 18/- to 20/- for full cases, and Californian Bartlett, 24/- per cask. Scotch-grown Gros Colmar Grapes were round 3/6 per lb, and Almeria Grapes continued dear at 25/- to 50/- per barrel. The prices of Dates, Figs and Chestnuts were unchanged.

THE WEATHER FOR NOVEMBER.

November was an exceedingly rainy and humid month, but not dull. The mean barometric pressure was lower than in any previous November during fifty-five years' observations. Relative humidity has never been exceeded, and rainfall only once, in the same month, during that time. The first few days and the last week were very cold; the intervening period being very mild. The mean temperature of the entire month was 1° below normal, and ground frost was limited to seven nights. A total of six inches of rainfall was recorded, or 2¾ inches above the average; considerably raising the ground water-level. There was not much wind, but a moderate gale almost throughout the 14th. Dense fog was experienced during the 24th, and hail occurred on three days; but neither snow nor thunder. *Joseph Baxendell, The Fernley Observatory, Southport.*

THE WEATHER IN SCOTLAND.

The persistent wet of the preceding month was continued during November, the rainfall having the high aggregate of 129 millimetres, or 5.08 inches. This fall was distributed over twenty days, the greatest amount for one day being 1.27 inch on the 18th. Sunshine totalled 74 hours, a daily average of 2½ hours and a percentage of .34, which is a little above the average for November. The 12th was the brightest day with 6.3 hours of sunshine. There were in all only eight absolutely sunless days. Temperature was slightly under normal, the mean maximum being 45° and the mean minimum 36.2°, this giving a mean of 40.6°. The highest maximum of 57° occurred on the 4th, and the lowest minimum of 25° on the 1st, an absolute range of 32°, On the grass eleven days of ground frost were registered. the lowest reading of 17° being on the morning of the 1st. At one foot deep the soil temperature was 2° higher at the end than at the beginning (an unusual happening). Air pressure was variable but generally low, the average being 989.15 millibars. The highest reading of 1022.6 mbs. was on the 27th, and the lowest, 967.4 mbs., on the 5th. A gale was experienced on the 5th and fogs on the 19th, 25th and 27th. *William McClelland, Meteorological Station, Training College Gardens, Mayfield, Dundee.*

GARDENING APPOINTMENTS.

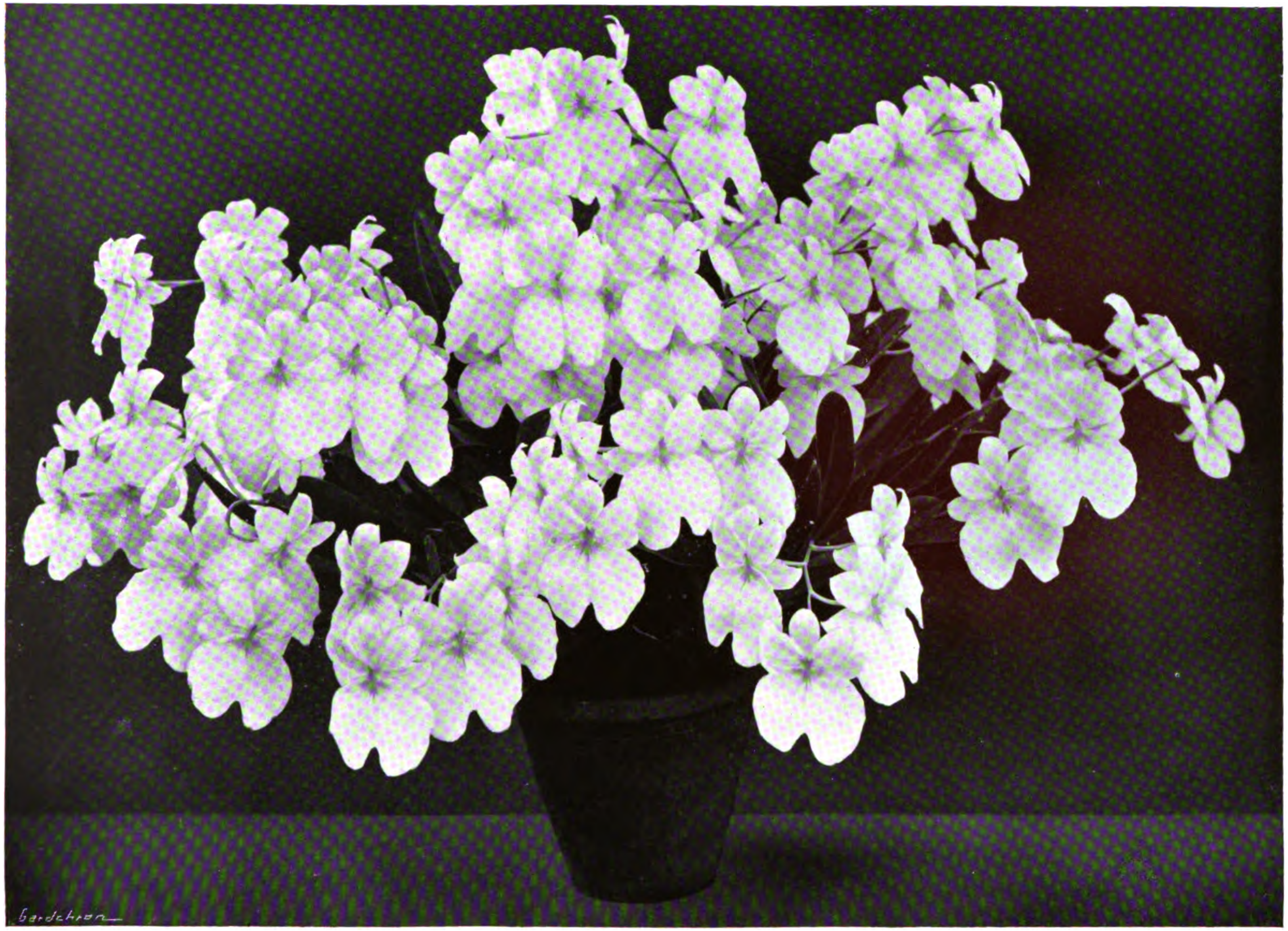
Mr. A. T. Billings for the past three-and-a-half years gardener to H. Wilson Young, Esq., Chesswater House, Rickmansworth, as gardener to Major Lors Phillips, Down Grange, Basingstoke.

Mr. S. Warner for five years gardener to Col. Barham, Hole Park, Rolvenden, Kent, as gardener to W. Harker, Esq., Blofield Hall, Norwich. (Thanks for 2/- for R.G. O.F. Box.—Eds.).

Mr. W. Sturt recently gardener at Rhine Hill, Stratford-on-Avon, and previously of Llwynarthan, Cardiff, and Stansted Park, Sussex, as gardener to H. R. Broughton, Esq., Anglesey Abbey, Lode, Cambridge. (Thanks for 2/6 for R.G.O.F. Box.—Eds.)

Mr. Wm. Payne for the last nine-and-a-half years gardener to the late Sir Wm. Corry, Bt., Norbury Park, Dorking, and Claremont, Esher, Surrey, as gardener to Sir Raymond Dennis, Piccards Rough, St. Catherines, Guildford, Surrey. (Thanks for 2/- for R.G. O.F. Box.—Eds.)

Supplement to the GARDENERS' CHRONICLE.



MILTONIA VEXILLARIA VAR. SNOWFLAKE.

THE
Gardeners' Chronicle

No. 2087.—SATURDAY, DECEMBER 25, 1926.

CONTENTS.

Aberdeen, notes from 508
Allotments, decrease in the number of ... 501
Alpine garden—
  A pretty native rock plant 509
  Armeria Vindictive 509
  Claytonia australasica 509
  Genista sagittalis ... 509
Buddleia Forrestii; 502
  B. Fallowiana ... 502
Bulb garden—
  A note on Gladioli... 509
Bulbs, the importation of diseased... ... 510
Chrysanthemums at Southport 502
Chrysanthemums at Hull Show 511
Daffodil fly, the ... 506
Elm, the Moline ... 503
Fruit garden—
  Fruit trees and lime 510
"Gardeners' Chronicle" Medals, winners of, in 1926 501
"Gardeners' Chronicle" seventy-five years ago 503
Hall, Mr. J. O. ... 502
Hardy flower border—
  Phlox divaricata var. Laphamii ... 509
Hedges, garden ... 511
Indoor plants—
  Ruellia Portellae ... 503
  Stephanotis floribunda 503
Miltonia vexillaria var. Snowflake 501
Obituary—
  Curry, F. W. ... 511
  Fraser, James Cunningham ... 511
  McAdam, Adam ... 511
Pink, Mrs. Sinkins, origin of 502
Plant cells, longevity of 501
Plants from China, some new 501
Polyanthuses ... 511
Rhubarb, a winter ... 511
Sander Gold Medal for the best plant novelty of 1926 ... 502
Societies—
  Guildford and District Gardeners'... 511
  Reading and District Gardeners' ... 511
  United Horticultural Benefit and Provident 511
Tar distillate sprays... 502
Trees and shrubs—
  Cytisus purgans ... 505
  Picea rubra ... 505
Vegetable garden—
  Early Potatos ... 510
Week's work, the ... 504
Welsh garden, notes from a 507
Wisley, notes from ... 508

ILLUSTRATIONS.

Chrysanthemums in the conservatory at Hesketh Park, Southport 507
Hall, Mr. John O., portrait of 502
Odontonia Nesta, Stamperland variety 503
Phlox divaricata var. Laphamii 509
Picea rubra at Stanage Park 505

SUPPLEMENT PLATE.

Miltonia vexillaria var. Snowflake.

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last fifty years at Greenwich, 38.6.

ACTUAL TEMPERATURE—
***The Gardeners' Chronicle* Office, 5, Tavistock Street, Covent Garden, London, Wednesday, December 22, 10 a.m. Bar. 30.5. Temp. 38°. Weather, Dull.**

Longevity of Plant Cells.

THE age to which some plants may attain is prodigious. Californian Sequoias flourish to-day which were already over a thousand years old when the Christian era began. Those trees, the tops of which have looked down on the world for a period of thirty centuries contain living elements which are the direct descendants of the embryonic cell from which the tree was formed in that far off "dark abysm of time." But it is doubtful whether in the tissues of these ancient plants any of the original cells formed when the plant was young still remain. Cells of the growing points of root and stem grow and divide and have gone on growing and re-dividing year in and year out for these thousands of years. But the cell left after division of the "mother" embryonic cell which formed it, may, for all we know, have found rejuvenescence by the act of dividing ; as though they found their immortality, or, at all events, their incredible longevity, by casting off continuously their mortal parts. But as to the age to which a cell may reach that has assumed its place in the ranks of formed tissues, very little is known. Such cells, for the most part, have but a brief span of life. They immolate themselves for the benefit of the plant, becoming, it may be, constituents of dead, woody or other elements. Yet not all submit to this brief fate. Sometimes to the cells of plants is vouchsafed the leisure to grow old. Thus, for example, Dr. MacDougal in a most interesting account* of the Cactus-like Sahuaro (Carnegiea gigantea) which grows in the desert regions of Arizona, has shown that some of the individual cells of the medulla (pith) have a life of not less than a century and a half. All through these years these cells go on growing—though needless to say at a leisurely pace. They undergo division, but rarely ; some, it is true, turn into woody elements and by their death become of use as water-holding or conducting elements. But for the most part these medullary cells just go on living, contributing little or nothing to the well-being of the plant, except by forming a sort of internal columnar mattress on which the more external tissues may repose. Of these cells it is almost true to say that "they change, but they cannot die." Down at the base of the Cactus-like stem of Carnegiea there are to be found also aged epidermal cells which rival in longevity the cortical cells. As is well-known, the cellular tissues of such desert plants as Opuntias and Carnegiea show a curious diurnal rhythm in acidity. Thus the sap of Opuntia shows its greatest acidity in the morning and this acidity goes on decreasing until about four o'clock in the afternoon. It is generally supposed that this acidity is due to incomplete respiration as a result of which carbohydrate material does not break down completely into carbon-dioxide and water, but only undergoes partial decomposition with the formation of organic acids, and it is further held that the high acid content of the tissues serves as an aid to the plants in resisting dessication by the high temperature to which, of course, such plants are exposed in their native habitats.

Our Supplement Plate.—On June 15 last, the handsome specimen of Miltonia vexillaria var. Snowflake, illustrated in our Supplement Plate, was exhibited before the Royal Horticultural Society by the late Sir George Holford (gr. Mr. H. G. Alexander), Westonbirt, Tetbury, Gloucestershire. The specimen carried no fewer than twenty-two spikes bearing an aggregate of one hundred-and-eleven snow-white flowers. The variety is appropriately named, and so long ago as June, 1912, it was awarded a First Class Certificate by the Orchid Committee of the Royal Horticultural Society. The specimen illustrated was considered to be one of the finest examples of a Miltonia vexillaria ever seen, and Mr. Alexander was awarded a Cultural Commendation in recognition of the high cultivation it represented.

Our Almanac.—The usual *Gardeners' Chronicle* Almanac, giving a list of exhibitions, meetings, annual outings and other events of interest to horticulturists in 1927 will be included with our second issue in the New Year. Readers will greatly oblige if they will send dates of shows, meetings, etc., fixed for 1927, at their earliest opportunity, in order that the Almanac may be made as complete as possible. As there may be a few secretaries of societies who do not take *The Gardeners' Chronicle* we shall be greatly obliged if our readers will make known to them the fact that we are publishing this list of events.

Winners of "The Gardeners' Chronicle" Medals in 1926.—The following list gives the names of the winners of *The Gardeners' Chronicle* Medals in 1926, and the exhibitions at which they were offered.—Paris Spring Show, for Orchids, M. Perrin, 196, Avenue Marguerite-Renaudin, Clamart, France ; R.H.S. Amateur Show, for flowering shrubs, Col. R. S. Clarke, Borde Hill, Cuckfield, Sussex ; National Sweet Pea Society's Show, for the best amateur exhibit, F. W. Franks, Esq. (gr. Mr. W. Humphrey), Loampits, Tonbridge, Kent ; Wolverhampton Floral Fête, for an exhibit of pot plants, W. J. Westwood, Esq. (no address given) ; R.H.S. of Ireland, Dublin Show, for rare plants, Capt. L. Riall, Old Conna, Bray, Co. Wicklow ; Shrewsbury Show, for hardy fruits, Col. Heywood-Lonsdale (gr. Mr. J. Mills), Shavington Hall, Market Drayton ; Southport Show, for the best amateur exhibit of vegetables, Hon. Vicary Gibbs (gr. Mr. E. Beckett), Aldenham House, Elstree ; Dundee Show, for the best amateur exhibit, Mr. Peter Donaldson, Station Cottage, Blackford, Dundee ; Royal Caledonian Edinburgh Show, for the best bunch of Grapes, Earl of Strathmore (gr. Mr. D. McInnes), Glamis Castle, Glamis, Forfarshire ; Taunton Chrysanthemum Show, for the best amateur exhibit, Mr. F. W. Penny, Greenway House, Taunton ; National Chrysanthemum Show, for Japanese blooms, Hon. Sir John Ward (gr. Mr. C. Beckett), Chilton, Hungerford ; Brighton and Hove Chrysanthemum Show, for Grapes, Lt.-Col. P. R. Papillon, Crowhurst Park, Battle ; Orchid Club, for Orchids, Dr. Craven Moore, Conyngham Road, Victoria Park, Manchester.

Decrease in Allotments.—The Executive Committee of the National Allotments Organisation Society, viewing with concern the serious decrease in allotments in England during the past year, has appealed to the Government, asking that a committee of inquiry as to the causes may be set up. The resolution states that there are 64,000 fewer allotments than in 1925, and expresses the opinion that, "unless immediate steps are taken, one of the greatest movements of modern times making for the physical and social betterment of the nation, will be reduced to pre-war dimensions." The Committee is of the opinion that many local authorities permit allotments to be acquired for building purposes when there are other equally suitable sites available ; that they take no steps to obtain alternative land when allotments are so taken away, and that the authorities place the claims of sport before those of allotments.

Some New Plants from China.—*Inventory No.* 77, issued by the United States Department of Agriculture, containing a list of seeds and plants imported by the office of Foreign Plant Introduction, Bureau of Plant Industry, during the period from October 1 to December 31, 1923, includes some interesting garden plants collected in Yunnan, China, by Mr. J. F. Rock, of the National Geographic Society, Washington. They include a white-flowered Prunus which grows about twenty-five feet high on the slopes of Peima Shan at an altitude of 13,000 feet. The flowers are succeeded by red fruits, which, although eaten by the Tibetans, are not, apparently, very palatable. The region where this tree grows is quite cold and covered with snow for a large part of the year. Mr. Rock has also introduced a wild Apple from Likiang. It forms a tree about thirty feet high and bears small, attractive, uniformly red, oblong, Cherry-like fruits which are sold in the markets of Likiang. His new Castanopsis Delavayi is said to be one of the finest and hardiest timber trees of the Likiang district, where it grows at an altitude of 8,200 feet. The glaucous, glabrous leaves are serrate on the upper halves. The fruits are small and enclose a sweet, edible kernel.

Horticultural Exhibition at Brussels in 1927.—The Royal Agricultural and Horticultural Society of Brussels is to organise, in September, 1927, an international horticultural exhibition, to coincide with the Jubilee celebrations of the Federation of Belgian Horticultural Societies and the International Horticultural Congress to be arranged by the same Society.

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* Growth and Permeability of Century-old Cells by Dr. D. T. MacDougal. Reprinted from *The American Naturalist*, Vol. LX, Sept.-Oct., 1926.

Buddleia Forrestii or B. Fallowiana.—Doubt has been expressed concerning the identity of the plant illustrated in our issue of December 18 (p. 489, Fig. 214) as Buddleia Forrestii. Mr. Marquand, of the Kew Herbarium, considers it is not B. Forrestii, Diels, but B. Fallowiana, Balf. f. et. W. W. Smith. He states that the true B. Forrestii, of which there is a good series in the Kew Herbarium, collected by Mr. George Forrest, is a much less tomentose plant with very different flowers, and with a corolla tube about three times as wide; moreover, the descriptive notes on p. 489 hardly agree with B. Forrestii, but rather with B. Fallowiana. We publish this note for the purpose of preventing possible confusion, until the identity of the plant figured is ascertained.

The Society of Amateur Botanists.—A most interesting history of the defunct Society of Amateur Botanists was given by Mr. J. Ramsbottom at a recent meeting of the Linnean Society. He stated that Mordecai Cubitt Cooke (1825-1914) was appointed head master of the new Trinity School, Lambeth, at the age of twenty-three, and there he conducted evening botanical classes under the old Science and Art Department. In the later 'fifties he occasionally took his pupils for country rambles. Subsequently they were joined by outsiders, and in 1860 constituted themselves into the Society of Amateur Botanists. This was planned for excursions, interchange of specimens, communication of papers, and the establishment of a library, herbarium, and museum. Cooke was the first and only president. Excursions were held on alternate Saturdays, and meetings on alternate Wednesdays. At one time the Society numbered about fifty, and among the members and those who attended the meetings were James Britten, Thiselton Dyer, W. W. Newbould, Berthold Seemann, Worthington G. Smith, and Henry Trimen. Some of the papers read at the meetings were published in the *Journal of Botany*, or in the ephemeral *Botanists' Chronicle*. The meetings were held first at the Metropolitan Club, Edgware Road, and then over the shop in Piccadilly of Robert Hardwicke, the publisher of natural history works. The formation of *Hardwicke's Science Gossip* was described, and the manner in which a letter in the first volume (1865) from W. Gibson, suggesting an association of amateur microscopists "something on the plan of the Society of Amateur Botanists," led to the formation of the Quekett Microscopical Club. The new club enrolled 155 members in its first year. Excursions were carried out, as with the Society of Amateur Botanists, many of whose members joined the new club. The Society languished and may be said to have been killed by the Quekett Club Slides were shown of the Trinity School, Lambeth, of a circular announcing evening botany classes conducted by Cooke, the cover of the *Proceedings of the Society of Amateur Botanists* drawn by Worthington G. Smith (the original was also shown), and other examples of Smith's caricatures.

Interesting Fruits and Seeds from Ayrshire.—Commenting upon our illustration of the fruits of Periploca graeca (December 18, p. 485, Fig. 212), Mr. A. T. Harrison, of Culzean Castle Gardens, writes: "Although growing well here, Periploca graeca does not flower freely and, so far, I have never seen seed-pods. I enclose a few pods of Romneya Coulteri, a plant much discussed in *The Gardeners' Chronicle* earlier in the year; also one or two pods of Wistaria sinensis, another plant which I do not remember ever to have seen fruiting previously; and lastly, three fruits of the hardy Orange, Aegle sepiaria. The production of so many uncommon seeds and fruits this year is ample evidence of the exceptionally fine season experienced in the west and south-west of Scotland during 1926, and one can only hope that the coming year may be as kind for outdoor gardening generally."

Horticultural Exhibition at Frankfort in 1929.—A meeting was recently called at Frankfort by the Curator of the State Gardens there, Herr Bromme, of twenty-one representatives of all phases of horticultural interest, two representatives of the town, and two of the Palm-Garden company, in order to discuss the question of arranging a horticultural exhibition in 1929. It was felt that it would form a good opportunity to demonstrate the high standard attained by horticulture in and around Frankfort, and that the Palm Gardens would make an ideal exhibition ground. It was agreed in principle to approve the project, and to take the first steps towards putting the matter in train.

Mr. John Oswald Hall.—As a relaxation from business activities, Mr. J. O. Hall has for many years past devoted his spare time to horticultural pursuits, Orchids in particular claiming a large share of his attention. Mr. Hall was born "in England, at Carnarvon Hall, Stratford, London, in the diocese of Westminster," in March, 1849, and at the age of nineteen years he went out to the Argentine, settling at Buenos Aires, where he has remained ever since. Over forty years ago, when floriculture in general and Orchid culture in particular were very little understood in Buenos Aires, Mr. Hall began to form a collection of Orchids; now he has one of the most interesting collections in South America, and he has imbued others with his enthusiasm for these and other flowering plants. His success is due to personal attention for, as he puts it, "I know little or nothing of botany, but Orchids and other plants have always seemed to like me and my ways."

MR. JOHN OSWALD HALL.

The de Smet Anthuriums.—We learn that the collection of Anthuriums made by the late M. Arthur de Smet, has been acquired by Comte de Kerchove de Denterghem, who is the President of the Ghent Royal Agricultural and Botanic Society. The plants are being housed in the greenhouses at Beirvelde Castle, and will be exhibited at the next Quinquennial Show at Ghent in 1928.

Chrysanthemums at Southport.—Following the usual custom, Mr. Clarke, the Superintendent of the Public Parks and Gardens of Southport, has provided the inhabitants of this seaside resort with a fine display of Chrysanthemums in the large Winter Garden at Hesketh Park. In addition to the November display, however, Mr. Clarke has this season cultivated a collection of late-flowering varieties, thus continuing the floral exhibition through the month of December. The illustration on p. 507 (Fig. 220) shows the fine effect produced in Hesketh Park by the December-flowering Chrysanthemums.

Sander Gold Medal for the best Plant Novelty of 1926.—A special committee of the Royal Horticultural Society has awarded the Sander Gold Medal to Baron Bruno Schröder, Dell Park, Englefield Green, Surrey, for his handsome Brasso-Laelio-Cattleya Margery, this being regarded as "the best Greenhouse Novelty shown to the Society in the course of the year." B.-L.-C. Margery is the result of crossing Cattleya Hardyana alba with B.-L.-C. The Baroness, and it was exhibited before the Royal Horticultural Society on November 2 (see *Gard. Chron.*, November 6, p. 377), and figured in our issue of November 13, p. 391. Both Baron Schröder and his able Orchid grower, Mr. J. E. Shill, are to be congratulated upon raising such a fine Orchid and winning the Sander Gold Medal with it.

Help for Gardening Charities.—Success has again crowned the efforts of Mr. W. Auton, of Pyrford Court Gardens, to raise money for the Gardening Charities. By organising a whist drive, rummage sale, the collection and sale of plants, opening Pyrford Court Gardens, and personal appeals, he has succeeded in raising the very substantial amount of £88, which he has divided equally between the Royal Gardeners' Orphan Fund and the Gardeners' Royal Benevolent Institution. It will be remembered that Mr. Auton raised the splendid sum of £102 by similar methods and for the same objects last year, but when the financial stringency of 1926 is taken into consideration, it will be conceded that this year's result is not less creditable, and anyone who has tried to collect money will realise that it must have entailed considerable work.

Tar Distillate Sprays.—The Ministry of Agriculture has published some useful details on spraying fruit trees with tar distillates made by distilling tar and emulsifying a certain part of the liquid which distils over. There are several brands of tar distillate on the market known by proprietary names, and their use for the destruction of insect pests is very satisfactory. Growers, however, are warned to be very careful to follow the instructions furnished by the makers, and advised that the trees can only be sprayed with safety when the buds are dormant. In normal seasons it is safe to spray Plums up to the end of January, but in mild seasons the buds must be closely watched if spraying is delayed until towards the end of that month. Apples may be sprayed with safety for some time after the Plums have reached the dangerous stage. The best times for spraying are December and January for Plums, and up till mid-February, and possibly later, for Apples. The work should be done in dry weather, as rain immediately after spraying reduces the efficacy of the specific, and it should not be done in frosty weather. It is recommended that pruning should precede spraying and that digging should follow it. Hard water is not suitable for mixing with the distillate as it causes a brown, oily substance to separate out. Growers should also remember that the spray will scorch green foliage of plants growing underneath the trees, and where Gooseberries or Currants are planted as an under-crop the spraying should be done before the leaves of the bush fruits appear.

Origin of Mrs. Sinkins Pink.—The recent death of Mr. John Sinkins, husband of Mrs. Sinkins who raised the famous Pink that is named after her, opens up an interesting problem as to where this most useful garden plant was raised. Mr. and Mrs. Sinkins were workhouse master and matron respectively at Malmesbury, Wiltshire, from 1859-1867, and it is claimed that while they were at Malmesbury, Mrs. Sinkins raised the Pink, which is stated to be the result of crossing Dianthus fimbriatus with a Clove Carnation. Mr. and Mrs. Sinkins subsequently became master and matron respectively of Eton Union Workhouse, and Mr. Charles Turner, nurseryman, of Slough, who was one of the guardians, saw the Pink growing in the workhouse garden and was given cuttings by Mrs. Sinkins. Mr. Turner later introduced the variety to cultivation. The interesting problem arises as to whether the origin of this favourite flower was at Malmesbury or Eton, but the weight of evidence seems to be in favour of Malmesbury, and it is common belief in that town that the Pink originated there. It is possible that Mrs. Sinkins took some of her plants with her from Malmesbury to Eton, and that she had them for some years before they were detected by the keen eye of Mr. Charles Turner. Mr. Arthur Turner informs us that one of his employees who has been with the firm for nearly fifty years remembers the first cuttings coming to the nursery from the workhouse garden at Eton. Mr. Sinkins died at Slough and had attained the ripe old age of ninety.

The Moline Elm.—An account of this new Elm is given in the *Seed World*, U.S.A., for November 19. It was discovered at Moline, in Illinois, hence the name. It differs from the American Elm in having larger leaves, a straighter trunk, longer and more upright branches, and a dense, compact, symmetrical top. The tree is said to grow very rapidly and makes a good street tree or specimen for a lawn. The upright, fastigiate habit has been responsible for the ridiculous suggestion that it is a cross between an Elm and Lombardy Poplar.

Excessive Rainfall at Bartley in November.—Mr. G. H. Dalrymple writes :—" In the several records of the rainfall for November reported in *The Gardeners' Chronicle*, I have seen no figures approaching those of our record at Bartley, near Southampton, viz., 10.76 inches up to 9 a.m. on November 30. As a contrast, the rainfall for July, August and September amounted to 1.62, 1.03 and 0.88 inch, respectively, or a total of 3.53 inches for the three months. No wonder we were suffering from drought by the end of September ! "

Appointments for the Ensuing Week.—Tuesday, December 28 : Newcastle Horticultural Mutual Improvement Society's meeting and lecture. Thursday, December 30 : Paisley Florists' Society's meeting.

"Gardeners' Chronicle" Seventy-five Years Ago.—*The Lucombe Oak.*—This is classed among the varieties of Quercus Cerris, or mossy-cupped Oak, in Loudon's "Arboretum Britannicum," where it is stated to bear so close a resemblance to the Fulham Oak as scarcely to be worth keeping distinct. Be this as it may, it is unquestionably a very handsome, free-growing sub-evergreen tree, attaining a large size in situations favourable to its growth, and producing a very striking effect during the winter months, when most other trees are deprived of their foliage. There are some fine specimens of it at this place, growing on a sloping part of the park eastward of the house, where the soil is a friable loam resting on a dry, hard, clayey subsoil, and where the trees are to some extent protected by large Sycamore and Elms from the cutting, north-west winds, which prove so destructive to vegetation in this part of the kingdom. The group consists of ten trees, the largest of which measures nine feet three inches in girth at four feet from the ground, and has an erect stem of forty-five to fifty feet high, furnished with numerous spreading branches. Its height altogether is about ninety feet, and the diameter of the space covered by its branches is twenty yards. The other trees are all nearly of the same height, but vary in girth from eight feet nine inches to seven feet four inches, which is the smallest in the group. To persons residing in the midland counties where large Oak trees are more common than in Cornwall, the above dimensions will probably not be considered anything very remarkable ; but in so far as they have reference to the Lucombe Oak, I think they are worth recording, were it only for the sake of bringing this noble sub-evergreen tree under the notice of the planter and thereby leading it its more frequent introduction near a residence, where it is certain to prove highly ornamental, if sufficient room is allowed for it to spread. From a tree which was cut down some years ago, I ascertained the wood to be very clean-grained, and beautifully marked when sawn up into planks. It was one of the first planted here, and considered to be about seventy-six years old. *Wm. Beattie Booth, Carclew. Gard. Chron., December* 27, 1851.

Publication Received.—*Herbs of Healing*, by Edward Step ; Hutchinson and Co., Ltd., Paternoster Row, E.C. ; price 10/6 net.

INDOOR PLANTS.

STEPHANOTIS FLORIBUNDA.

Stephanotis floribunda is a general favourite, and produces, when well established, large numbers of clusters of pure white, waxy, sweet-scented flowers over a period extending from May to September. The species is a native of Madagascar, and was introduced to this country in 1839.

Occasionally egg-shaped seed-pods are produced by this plant. The seeds germinate freely, but seedlings, as a rule, grow more vigorously than is desirable, failing to flower in anything approaching profusion.

This Stephanotis is best propagated from cuttings made of short growths of the previous year, inserted singly in spring, in small sixty-sized pots filled with a compost consisting of one part each of loam and peat, lightened with silver sand. Cover the pots with a bell-glass and root the cuttings in a temperature of 65° to 70°.

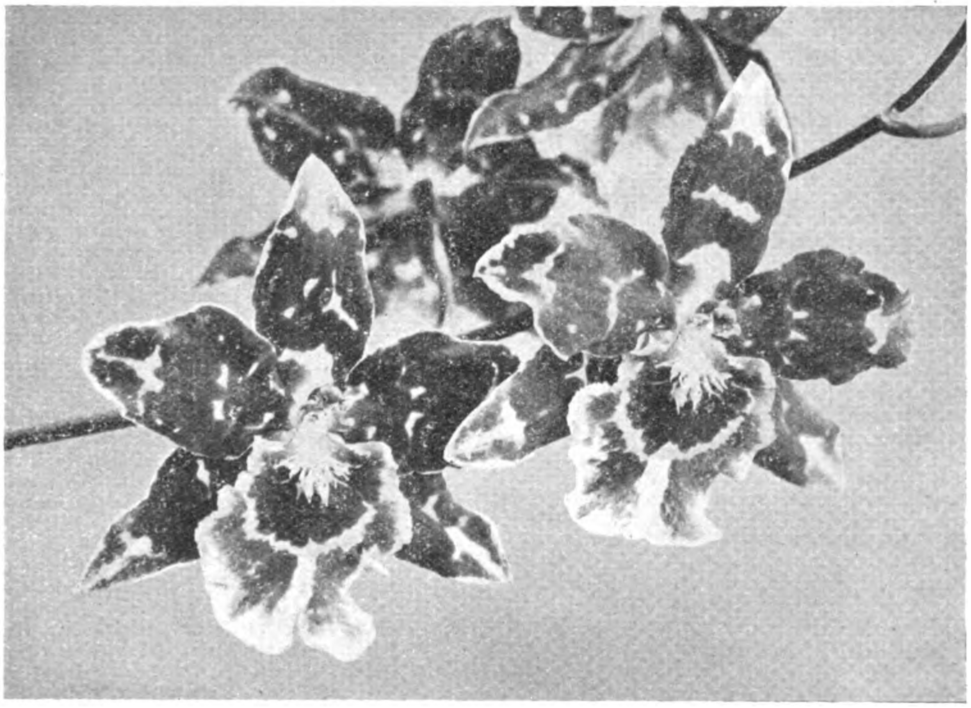

FIG. 218.—ODONTONIA NESTA, STAMPERLAND VAR.

R.H.S. First Class Certificate, December 14. Flowers chocolate-red and rose. Shown by Robert Paterson, Esq., Stamperland, Cathcart, Glasgow.

When well-rooted and slightly hardened, transfer the plants to forty-eight-sized pots, and grow them in a sunny position not far from the roof-glass in an ordinary stove temperature. Do not stop them, but train a single, strong growth either around a stake or up the roof. If strong, healthy plants are propagated early in the year they may require another shift into eight-inch pots. Syringe the plants twice daily and water the soil copiously when it is full of roots. Shade the plants from the sun during the hottest part of the day.

Early in February cut off the weakly, soft ends of the shoots, and if the plants are required for exhibition purposes, train the stems around stakes, which will result in many side-shoots developing. Growth will develop rapidly in brisk heat and a moist atmosphere, but before much growth is made, transfer the plants to larger pots. They thrive well in a compost of equal parts of fibrous loam and peat, one part each of leaf-mould and charred soil and sufficient sharp sand to render it porous. Ample drainage must be afforded, as the roots will need watering freely during the growing and flowering season. Expose the plants fully to the light and train the young shoots thinly over wires near the roof-glass. The treatment in succeeding years may be similar, only more shoots will have to be removed to prevent overcrowding.

Stephanotis floribunda blooms profusely and continuously when planted in small borders, tubs or large pots, in a suitable soil.

There are two ways of pruning these much admired plants. First, to shorten the old flowering growths severely, in February, with the result that long, strong shoots are produced, which do not commence flowering until they have made considerable progress. Hard-pruned plants usually make the finest specimens, and are not infrequently cleaner than are those that are pruned lightly. The second method is to thin the growths where they are crowded, removing the weaker ones. Late autumn-formed flower buds often remain dormant until the spring, and these, if the growths are not shortened, will develop early in the spring, when they are most valuable.

Stephanotis growths should be shaded during the hottest part of the day, from April to August, and syringed every morning, and again in the evening, when the house is closed, during these months.

If the plants are infested with mealy bug, apply water forcibly by means of the syringe. The plants should never be allowed to flag through want of water, but should have an abundance of moisture, using clear soot-water, or weak liquid manure, when the soil is full of roots. Apply only sufficient water during the winter to keep the wood plump and the leaves fresh, resting the plants in a temperature of 55° to 60°. *H. S. Patton.*

RUELLIA PORTELLAE.

This is a useful winter-flowering species, having attractive foliage and bright rose-pink flowers which are produced very freely.

The plant branches freely and is very attractive when grown in pans. It is easily increased by means of cuttings, and grows freely in a house having an intermediate temperature. *J. Coutts.*

The Week's Work.

THE ORCHID HOUSES.

By J. Collier, Gardener to Sir Jeremiah Colman, Bart., Gatton Park, Reigate, Surrey.

Seasonable Remarks.—It is important to keep plants that are passing through their resting stage dormant for so long as possible. It may be necessary to rearrange the plants so that each may be in a position deemed most suitable for its present requirements. Plants in the Cattleya house usually need a great deal of attention, as although the majority will be at rest, some may be making new growth. These latter should be kept together in the warmest position of the house, where they will obtain all the sunlight possible. The progress of the plants that are active will be very slow and should not be unduly hastened. The general cleansing of the houses and plants will comprise the principal work at the present time and should be pressed forward in the endeavour to complete it by the advent of the New Year. It is a good plan to overhaul the plants with a view to destroying all insect pests that may have accumulated about them. The majority of the leaves are now fully matured, therefore the cleansing operations may be undertaken with little risk of injury to the plants.

THE KITCHEN GARDEN.

By F. Streeter, Gardener to Lord Leconfield, Petworth Park, Petworth, Sussex.

General Remarks.—During the short days, complete as much work as possible to relieve the pressure which is sure to occur with lengthening days. Complete all alterations as quickly as possible, and endeavour to start the New Year with a clean and tidy garden. The fallen leaves from the pleasure grounds are generating gentle warmth and will continue to do so until the summer, provided they are in a deep heap and made thoroughly firm. Our leaf-heap for the southern portion of the garden is sufficient to accommodate one hundred frames, which will enable us to force a considerable quantity of early vegetables. Compile the seed order and dispatch it to the seedsman as quickly as possible, as many seeds will require to be sown early next month. In very rough weather attend to the washing of all glass, and whitewash all stores, sheds, etc. Examine the stock of tools and make good all losses and breakages. Get Pea and Bean stakes sharpened ready for use immediately the crops are ready for them. Labels of a standard size should be made for the kitchen garden, painted and the varieties printed thereon, leaving only the date of sowing or planting to be added. All vegetables in store will need examining on frequent occasions with a view to removing any that are decaying. Set up Potato sets in shallow trays and sprout them in a frost-proof store. See that plentiful supplies of Rhubarb, Seakale, Chicory and Dandelion are introduced to the forcing houses. Keep a sharp watch for woodlice on Mushroom beds.

HARDY FRUIT GARDEN.

By W. Auton, Gardener to Viscount Elveden, Pyrford Court, Woking, Surrey.

Newly-planted Bush Fruits.—The heavy rains and abnormal winds have had the effect of throwing many bushes out of the perpendicular, and attention should be given to these so soon as the soil is sufficiently drained. If this is attended to soon after the mischief has been done, it is comparatively easy to restore the bushes to their upright position, whereas if left until growth commences, it would cause considerable injury to the young roots.

Pruning.—Endeavour to complete the work of pruning fruit trees on walls before the days commence to lengthen and the buds commence activity. While the pruning is being done select suitable shoots of varieties which it is intended to graft next spring. These may be tied in bundles, labelled securely, and heeled in until they are required for use.

General Remarks.—Any necessary repairs to hedges or fences of orchards may be done when frost puts a stop to other work. Advantage may also be taken of frosty weather for removing any old or useless trees, or cutting away heavy branches which it may be desirable to remove. When the ground is sufficiently dry, examine Strawberry beds and make firm those plants which may have been loosened by frost. See that ties on staked trees are sufficiently loose to allow for next year's growth, and this is particularly important where trees are held in position by triangular wires, or the cutting into the bark will do irreparable damage to the tree.

THE FLOWER GARDEN.

By F. C. Puddle, Gardener to Lord Aberconway, Bodnant, Taly-Cafn, North Wales.

Planting a Wall Garden.—The narrow joints between the stones may be planted with Sempervivums and Saxifrages of the encrusted section, including S. longifolia. The beautiful but difficult Lewisias may be planted in sunny pockets with every prospect of success, and other suitable plants are Pentstemon Davidsonii, P. cristatus, Primula Forrestii, P. redolens, the various forms of P. Auricula, Campanula mirabilis, Lithospermum rosmarinifolium, L. prostratum, Zauschneria californica, Origanum hybridum, Astragalus Tragacantha, Erinacea pungens, Onosma taurica, Androsace lanuginosa, A. strigilosa and Sphaeralcea Munroana. In the more favoured parts of the country Heeria elegans, Fuchsia procumbens, Celmisias, Crassula sarcocaulis and other succulents may be grown. In fact, it is a good plan to try in the wall garden any plants which are apt to succumb to damp and cold conditions in the rockery during winter.

Paved Gardens.—Before laying crazy paving, care should be taken that the site is well-drained, and the soil made porous; for it should be borne in mind that evaporation is necessarily slow under the stones, and unless measures are taken to prevent it, the plants may suffer from excess of moisture at the roots. The plants chosen for furnishing paved gardens are usually those of very prostrate habits. Although the actual walking track must necessarily be restricted to these, the appearance of the garden will be much improved if a few plants of tufted habit are used in those portions which are not generally walked upon. The Sisyrinchiums are excellent for the purpose, especially S. angustifolia and S. bermudiana; other effective plants include Pentstemon heterophyllus, P. Menziesii var. Scouleri and the various forms of Iris pumila.

FRUITS UNDER GLASS.

By T. Pateman, Gardener to Sir Charles Nall-Cain, Brocket Hall, Hertfordshire.

Successional Vines.—In most cases, the leaves have fallen, even from the latest vines, and the work of pruning and cleaning the rods and interior of the house should be completed as early as time will permit. If it is possible to do so, the house should be thrown open on all occasions and no fire-heat whatever used, at least, only sufficient to keep the water in the pipes from freezing. This treatment will give the vines a complete rest, so that when started into growth again, they will do so with renewed vigour.

Vine Borders.—In making new borders it will be wise to err on the shallow side rather than make them to a great depth, for a very deep root-run has a tendency to result in imperfectly ripened growth, followed by the buds breaking unevenly when the vines are restarted into growth. This is especially liable to occur if the borders are in the open with the roots growing deeply in the cold soil. Other evils may be traced to this error; for instance, in the early stages of growth, when the vines need most assistance, root action does not appear to keep pace with the top growth, resulting in the Grapes often setting badly.

PLANTS UNDER GLASS.

By John Coutts, Assistant Curator, Royal Botanic Gardens, Kew.

Lachenalias.—Plants that have been growing in frames and are well advanced in growth should be removed to a bright, sunny greenhouse and grown near to the roof-glass. They should be kept perfectly cool although, if desired, a portion of the stock may be afforded a slightly higher temperature to cause them to flower a little in advance of the main batch. Well-developed plants will be benefited by occasional applications of dilute liquid manure or soot water.

Bouvardias.—As these plants pass out of flower, they should be stood in a house having a temperature of about 50°, and rested for several weeks by withholding water at the roots. Early in the New Year they should be pruned hard, placed in a house having a temperature of 60°, watered more freely, and syringed on frequent occasions. With this treatment they will soon start into fresh growth, when, if it is intended to grow on the old plants, the soil should be shaken from them and the plants repotted in smaller receptacles. Afford water to the roots very carefully until they are established in the fresh compost. If it is desired to increase the stock, cuttings made from the young shoots will root readily in a warm propagating case; these Begonias are also readily increased by means of root cuttings made from the stouter portions of the roots.

Forcing Plants.—Continue to introduce fresh plants to the forcing house, according to requirements, always being careful to accustom them to the higher temperatures gradually. This applies to both bulbous and shrubby plants; in the case of bulbs, Tulips generally require special care, or they are very apt to go blind; a knowledge of the varieties is also of importance as some sorts force more readily than others.

FOR NORTHERN GARDENERS.

By A. T. Harrison, Gardener to the Marquis of Ailsa, Culzean Castle, Maybole, Ayrshire.

Plants in Pots.—All plants in pots should now be housed where they may be kept at least free from severe frost. These include fruit trees, Roses, Azaleas and forcing shrubs. The recent severe weather has hastened the ripening process of most plants and the fruit trees and Roses may be pruned before taking them indoors. Admit plenty of air on all fine days and nights, and close the ventilators only when frost threatens. The Azaleas and forcing shrubs should be introduced to warmer quarters as desired, and given similar treatment to that recommended for bulbs in a previous calendar.

Work for Wet Days.—During inclement weather, when outdoor work is almost impossible, opportunity should be taken to examine all roots in store. The earliest seed Potatos are sprouting and should be exposed to all the light available. Place them in single layers and admit plenty of air during mild weather to keep the young shoots short and sturdy. Later kinds should also be sorted over, and any decayed or doubtful specimens removed, while extra protective materials should be at hand to cover them when the thermometer falls to freezing point outside. Ware Potatos, which are usually stored in heaps, should also be turned over, and have all growths rubbed off, and damaged specimens removed. When this is done they should be covered again to keep the light from turning them green. Onions and Shallots should also be examined and the loose skins removed, taking care not to bruise the former. Arrange the bulbs on floors and shelves, where they will get plenty of air and light.

TREES AND SHRUBS.

PICEA RUBRA.

The Red Spruce.

The specimen of Picea rubra, illustrated in Fig. 219, is growing at Stanage Park on a well-watered hillside, in a group of giant Conifers, situated some eight hundred feet above sea-level. The species has been called the Red Spruce, and once the Newfoundland Red Pine, since rumour had it that the first specimen imported to our isles came from Newfoundland. It has often been confounded erroneously with, among others, our common Spruce (Picea excelsa). It is a tree that hails from north-east America, and the border provinces of the Dominion of Canada. This particular tree at Stanage is mentioned in Elwes and Henry's *Trees of Great Britain* (vol. VI, pp. 1378 and 1379); in 1910 it measured seventy-two feet high and five feet nine inches in girth; in 1914, it was seventy-nine feet high and five feet ten inches in girth; and in 1924 it had reached a height of eighty-seven feet with a girth of six feet seven inches. It was regarded as the biggest tree of its kind that Elwes and Henry had discovered.

From the manuscript record here, I gather that in the year 1840, my predecessor, Edward Rogers, obtained and planted two specimens of P. rubra, and this one, so far as we know, is the survivor of that duet. As a success in England, little can be said of, or for, the tree, and it is seldom found in gardens. Evidently, like many other Conifers from the Atlantic side of America, it has not succeeded in our climate, as do the specimens from the western side. As a tree, in its native land and its own environments, it held a good reputation for its timber value.

So far as outward appearances go, P. rubra bears such a close *prima facie* resemblance to our common Spruce that no passer-by, unless a student in quest, would stop to look for differentiations. But things are not always what they seem. A little investigation of a few of their characteristics would soon dispel the mist of illusion. I will summarise a few of their differences. The leaves of Picea rubra are shorter, more densely crowded and incurved, while those of the common Spruce are longer and point in a very distinct upward direction. Again, the branches of P. rubra are clothed with a dense pubescence, white on the young shoots and brown on the older branchlets, while P. excelsa, the common Spruce, only shows a few scattered tufts on the young stems, and these wear off considerably on the older branches. Another point of difference, and a more intricate difference, for the student to work out, is that the buds of P. rubra are fimbriated or fringed, that is to say, their terminal buds are enveloped with long, narrow, pointed, hairy, leaf-scale coverings, while those of P. excelsa can only show a common-place-looking, hard, dry bud.

So far, I have not mentioned the subject of cone differences. If cones were forthcoming at will, many a mystery would be solved, and quickly, too, and many a lesson be easily learned. The cones of the common Spruce run to lengths of four to six inches, with a diameter of an inch, while those of P. rubra are small, oblong specimens of but an inch-and-a-half to two inches in length. The cones of P. rubra, so far as I am aware, show an unnoticed and unrecorded characteristic. I once contrived to obtain a cluster of cones from the top of the specimen here. In some eighteen inches of length of this little arrangement of branch and branchlet, there were collected some eighty cones, sessile in character, and as pendulous in position as they could contrive to be in such an over-crowded dwelling.

To take two more nearly allied instances, and make brief endeavour to dissociate them, *i.e.*, P. alba and P. nigra, both of which in their day have been badly compromised in public view with the tree of this story, P. rubra. P. nigra and P. alba have bluish, glaucous-coloured leaves, quite unlike the more grass-green colour assumed by those of P. rubra, or, for the matter of that, P. excelsa; but as P. alba is quite devoid of any vestige of pubescence, that is where it shows its marked independence of character, in this once rather perplexing trio of Spruces—red, black and white. *Charles Coltman-Rogers, Stanage Park, Radnorshire.*

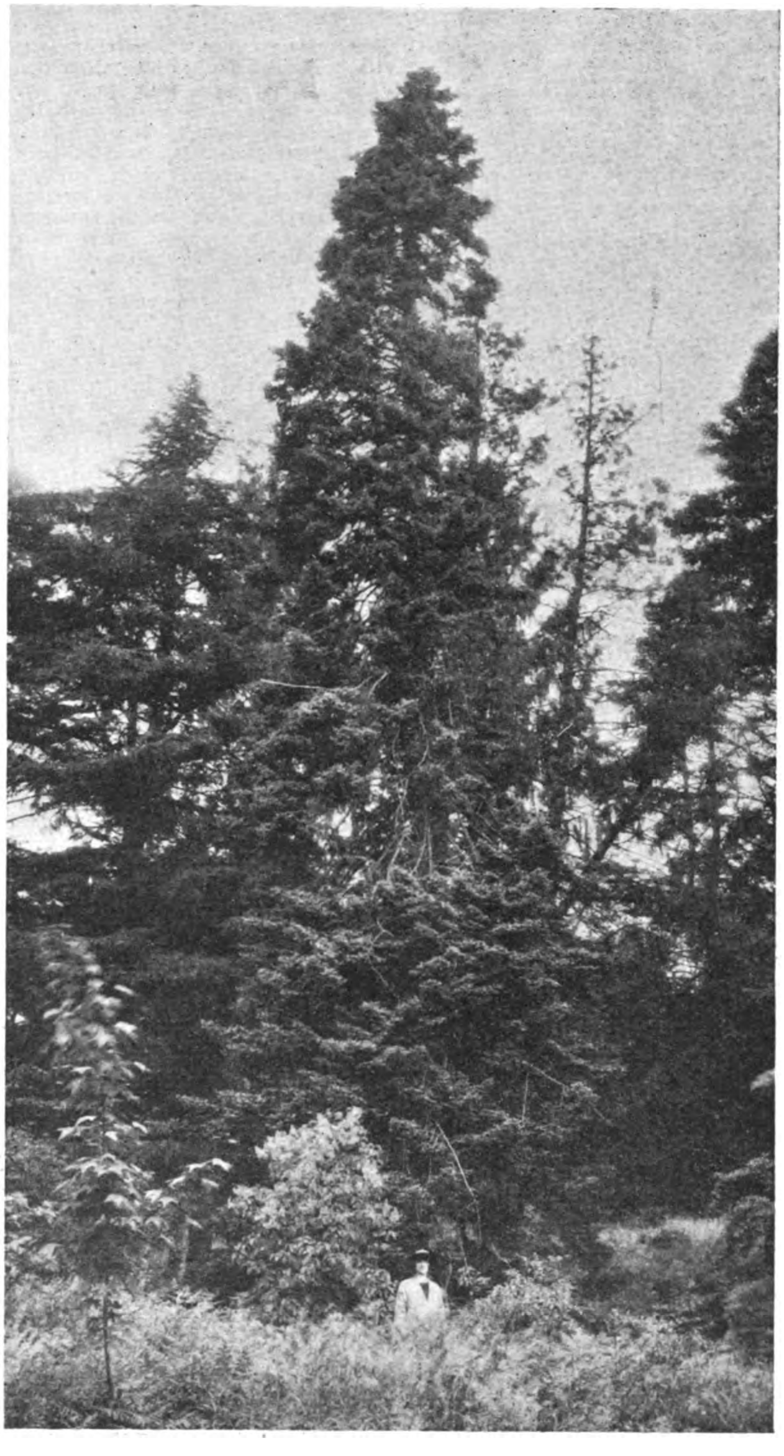

FIG. 219.—PICEA RUBRA AT STANAGE PARK.

CYTISUS PURGANS.

Although it has been known to our gardens for some 150 years, this charming Broom is scarcely ever grown by the average gardener. This is the more strange when one realises that in C. purgans we have a very shapely, compact species of rather under medium height (three feet to four feet), one tha tis a good doer in the poorest and most arid soils with full sun, and it is quite hardy. The blossoms, moreover, which appear in the later spring, are yielded with the utmost freedom, and, in addition to their being an unusually rich, full-toned yellow, they are deliciously fragrant. Indeed, I consider C. purgans the sweetest of all the Brooms, and on that account always like to have a bush near the house and in various parts of the garden. As a matter of fact, the popular Warminster Broom (C. praecox) owes its fragrance to C. purgans, which is one of the parents of that fine hybrid. The best way to raise this Broom is by seeds, but it may be increased by cuttings inserted in pots of sandy soil under a bell-glass, or in a closed frame, in August. *A.*

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THE DAFFODIL FLY.

SOME years ago, in notes regarding the Daffodil Fly (Merodon), I expressed the opinion, as the result of several years' observation, that the grub, in some cases, remained two years in the bulb before pupating, and suggested that, as such grubs are more injurious than the normal (" one year ") type, it would be of interest to see if they were of a different species to those that complete their life cycle in one year. I could not undertake this myself, being unable to give the necessary time and attention. Authorities to whom I submitted the evidence were rather sceptical, and some grubs that I sent did not survive the experiment. Since then, I have noted each year an increasing number of these two-year grubs, until last year, when I estimated the number of "one-year" and "two-year" grubs were about equal. Although I have not attempted to discover whether they belong to two different species or whether the two-year grubs are merely weakly or aberrant specimens of the same species, I have now obtained definite proof that these "two-year" grubs do exist, and are fairly common. The proof has really been very simple and came in the ordinary routine of work. I cover my seedling plots every year during May and June with strips of tiffany and so prevent the flies having any access to the bulbs. Two years ago one seedling plot, three feet by twelve feet, was not covered until sometime after the Merodon was about. Last year it was covered in good time. When taking up the bulbs in July, I found, as I expected, some bulbs eaten out, and the grubs pupated and gone, but I also found several (about an equal number) with grubs still in them, about one-half to two-thirds the size of a normal full-grown grub, and every evidence that they had been in the bulbs for a long time. Moreover, I found no bulbs with small, newly-hatched grubs, such as were found in all the open plots, showing that the tiffany covering is fully effective, and therefore that these half-grown grubs must have been from eggs laid in May or June the previous year.

The possibility that these two types of grubs are of different species may be chiefly of entomological interest, but the Daffodil grower is also affected in several ways. The two-year cycle enables the grubs to carry over an unfavourable season, for the Merodon is very susceptible to bad weather conditions at the time of emergence from the puparia. I may note, for instance, that this year (1926) the conditions were very adverse here throughout May, being almost uninterruptedly wet, or dull and cold, with light, misty rains nearly every day, and even if any survived the wet and cold they must have starved for they are pollen-eaters from open flowers, and the pollen was wetted or washed away nearly every day. In consequence I did not see a single Merodon fly all May or June. At last, I saw, and caught, two, on July 5, which is a record here—the latest I have seen any about in the previous twelve years being June 21. Thus, but for the two-year grubs, I might well expect to be nearly free from the Meroden next year. Then there is the effect on the bulbs, due to the different habits of the grub. The ordinary one-year grub, on hatching, bores more or less straight into the bulb and proceeds to eat out the heart of it, and the base with the ring of roots is affected only just at the point of entrance. Such bulbs, of course, make no leaf or flower, and, in fact, the main bulb is destroyed, but from the uninjured base are developed one or more young bulbs which will attain flowering size in two or three years. Only when the bulb is young or small is it so much damaged as to be destroyed. In the case of the two-year grub, the habit is much more destructive. When hatched, the grub, so soon as it has penetrated the tissue of the base plate, turns to one side and proceeds to eat nearly all round the circumference from which the roots spring, thus destroying them. It is, I think, significant that it eats nearly all round—about three-quarters to seven-eighths of the circumference—and then turns in to the interior of the bulb. This has the appearance of being a definite instinct or specific habit, and not due to late hatching or weakness. Some, however, do not display this habit so definitely, and, in fact, seem to meander about at random, and these may be weakly ones, or hybrids in which the two different instincts are in conflict or imperfectly blended! The general result is that the base plate and ring of roots being almost completely destroyed, the bulb has no power to produce new bulblets—and, if it does, from the small uninjured portion left, the grub, in the second season, may proceed to destroy them also. Consequently, bulbs attacked by the two-year grubs are generally destroyed entirely.

These two types, the one-year and the two-year, may appear in varying the proportions with different growers. For if all bulbs are lifted every year, those affected by the two-year grubs are so obvious that they will be thrown out at once, and if destroyed, the two-year grub type would tend to disappear altogether. But where the bulbs are lifted only every three or four years, the two types will tend to approximate to equality.

With regard to the species and their possible hybrids, the more complete knowledge we have of the life history of any plant enemy the better we shall be able to control it. For the seven years 1914 to 1920, I therefore kept records of all the Merodon flies caught here on my grounds, and the results are shown in the annexed table.

TABLE OF MERODON FLIES CAUGHT IN 1914-1920 AT MORWELLHAM.

Species or Colour Varieties.		1914	1915	1916	1917	1918	1919	1920	Variety Sex Totals.	%	Variety Totals
Tawny.	♂	11	8	1	25	58	48	2	153	45.0	342
M. Narcissi.	♀	7	12	5	25	73	62	5	189	55.0	
Double-banded. var. nobilis, etc.	♂	Not differentiated from Single Banded in these three years.			6	16	23	1	46	49.0	94
Intermediate ? Hybrids.	♀				6	24	17	1	48	51.0	
Single-banded. M. equestris	♂	10	3	5	33	59	54	3	149	89.9	166
and var. bulborum.	♀	6	5	1	6	7	4	0	17	10.1	
All Black.	♂	—	—	—	—	—	—	—	—	—	171
var. validus.	♀	16	5	3	33	62	47	5	171	100	
General	♂	21	11	6	64	133	125	6	366	45.6	Full total of all flies caught.
Sex Totals.	♀	29	22	9	70	166	130	11	437	54.4	
GENERAL TOTALS.		50	33	15	134	299	255	17	—	—	803

NOTE.—The variety totals and % of ♂ and ♀ for the Double-banded and Single-banded are for the four years 1917-1920 only, but all flies caught are included in the general totals.

I have retained the colour designations into which I sorted these flies in the yearly records—Tawny, Single-banded, Double-banded, and All Black—because, although I am indebted for much information as to the species and varieties, from Mr. J. C. Fryer, who encouraged me to keep these records; from Mr. J. E. Collin, to whom I sent the whole of the 1918 catch, and to Mr. C. Nicholson who hatched out the pupae collected in 1917, there appeared (up to 1918) to be so much uncertainty regarding the species and varieties, and no information at all distinguishing colour variations within the species from colour variations due to hybridisation, that only a trained entomologist would be competent to clear it up. Of those which I have recorded as Double-banded, and which I think are all hybrids, the var. nobilis was clearly distinguished, but the others varied considerably in the breadth of the bands and the depth of their colouring; and where the colour was very weak some may very likely have been recorded as Single-banded. This variation is what might be expected as the result of hybrids from Merodon Narcissi ♂ × M. validus ♀, or M. equestris var. bulborum ♂ × M. Narcissi ♀, and perhaps also from secondary crossings of these first hybrids with their parent species. M. Narcissi var. transversalis I should also expect to be a hybrid, though it is classed as a variety of M. Narcissi, and as the flies are banded they would be recorded with "Single-banded"—but I observed very few certain transversalis, and they were all females.

The chief points which appear from the figures of these records are, first, that the "All Black" or var. validus flies were all females; var. validus is therefore certainly only a sex-limited colour variety. This apparently had not been recognised in 1918, as it is not recorded as exclusively female in Verral's *British Syrphidae*. The question then arises, which is the male of the species of which validus is the female? I think that the figures point to M. equestris var. bulborum (or M. equestris and M. var. bulborum combined) being the male. It is true there are seventeen ♀ recorded (for the four years 1917-1920), but a few of these were certainly var. transversalis, which are always female, and the others are probably "intermediates" (possibly secondary hybrids), as intermediates were noted among the flies by Mr. Nicholson in 1917 and by Mr. Collin in 1918. Eliminating, therefore, these seventeen females, this would give (for the four years 1917-1920) 149 ♂ M. equestris, and M. e. var. bulborum, and 147 ♀ M. validus. There would then be but two true species, M. Narcissi and M. "equestris-validus." The alternative would be that there is only one true species, M. "Narcissi-validus," and that all the "banded" and all the ♀ Tawny (or Narcissi) are hybrids, in varying degree, between these extreme colour varieties. This, however, seems to me less likely in view of the approximation to equality, year after year, of the Tawny (*i.e.*, without any black bands at all), or M. Narcissi flies—and there can be no element of doubt about the recording of these, as they are clearly and sharply distinguished. The small deficiency of males may be fairly accounted for by the fact that they are slightly more difficult to catch owing to their greater restlessness and more erratic flight.

A few words in conclusion regarding the Lesser Daffodil Fly, Eumerus strigatus, as it is still considered by some to be injurious. I have here, apparently, both E. tuberculatus and E. strigatus, the former probably being more abundant, as, of about a dozen sent (in the pupa stage) for identification, only one turned out to be E. strigatus. At lifting and cleaning time, all damaged bulbs, however slightly, amounting to two hundred or three hundred every year, are reserved for my personal inspection. For the past twelve years I have made a special and thorough examination of these, and I have never yet found a single bulb in which the Eumerus was the cause of the injury. Very often Eumerus is present, but the injury primarily has always been quite clearly due to other causes, chiefly Merodon grubs. There has never been even a doubtful case, and the Eumerus grubs have been present simply as scavengers. For my part, therefore, I feel sure that the Eumerus is not only not injurious but probably (as a scavenger) beneficial. *A. J. Bliss.*

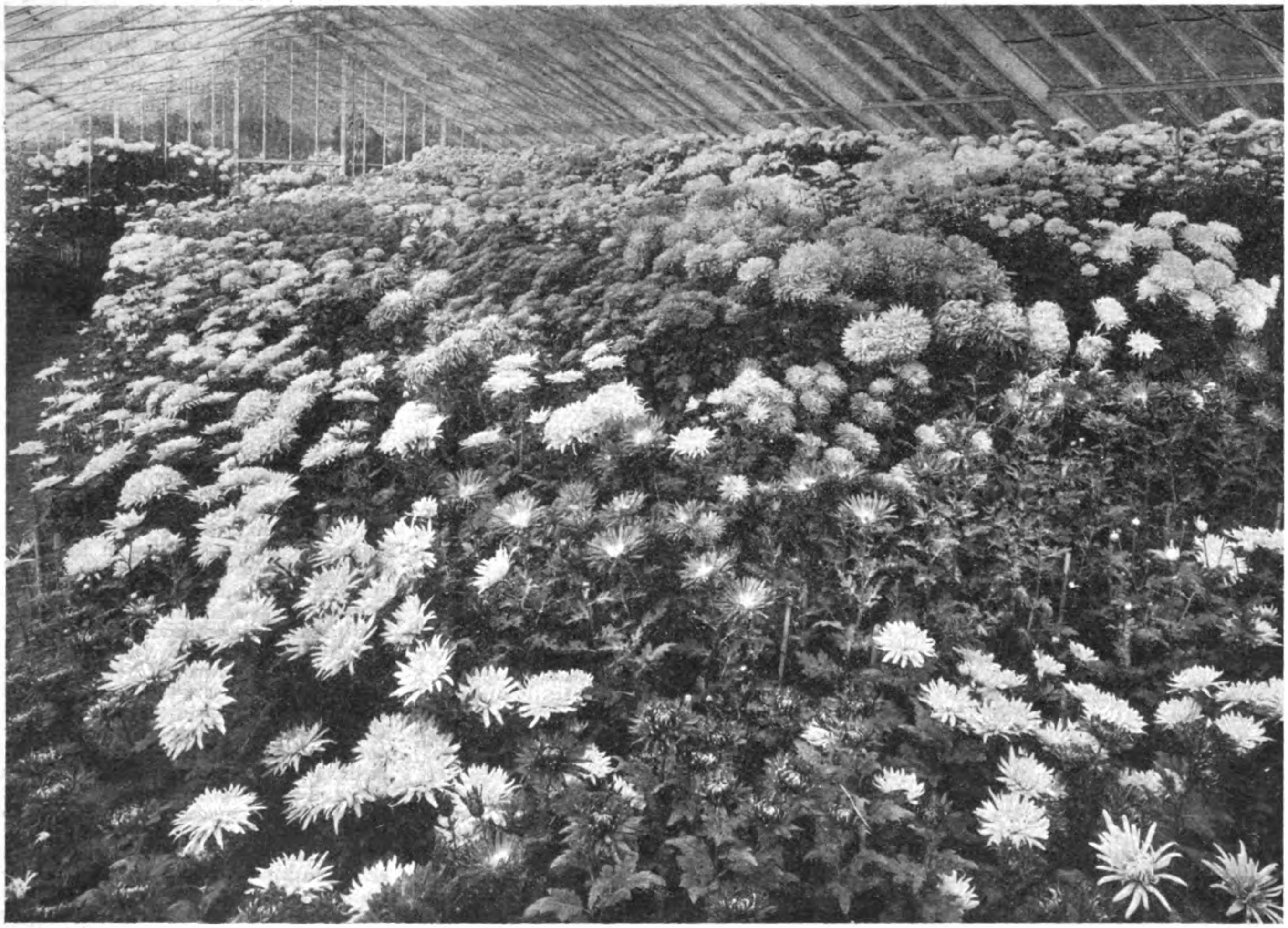

Photo Kay and Foley.

FIG. 220.—LATE-FLOWERING CHRYSANTHEMUMS IN THE CONSERVATORY AT HESKETH PARK, SOUTHPORT.

(see p. 502).

NOTES FROM A WELSH GARDEN.

There are few more strikingly beautiful shrubs than Cotoneaster pannosa at any season, and at the time of writing (mid-December) there is no other berrying subject of its kind to equal it. This species is evergreen, and the ample foliage, with its silky-white down, the claret tint of the younger wood, and the long and graceful sweep of the slender, elegant branches, are all delightful features of this useful shrub; when the numerous drooping fruit clusters have lost the greyish felt which coats the berries, and the latter gleam with their rich and glossy crimson-scarlet, the effect is singularly delightful. This fine Chinese species is later than any of its nearer allies, perhaps later than any other of the genus, to ripen its fruit, which is not at its best until near Christmas. I may add, further, that birds seldom eat these berries, the shrubs often carrying the latter until spring is approaching.

Another evergreen of remarkable beauty just now is Elæagnus macrophylla. The unusually large leaves (for this genus) are at this season very silvery on their underparts, and this is effectually displayed to view by their margins being waved. The young wood is also silvered, and during November and December the little Fuchsia-like flowers borne in clusters at the leaf-axils, are adorned with the same metallic lustre. These blossoms, moreover, are deliciously fragrant, an odour rather suggestive of the "Lemon-scented Verbena" (Lippia citriodora) pervading the air for several yards about the bush. This perfume, however, is not always in evidence. On some occasions the blossoms appear to be absolutely scentless. E. macrophylla is perfectly hardy, and here it succeeds in very dry, poor soil.

Daphne Dauphinii is full of blossom in the rock garden and delightfully fragrant. No weather seems bad enough to daunt the courage of this cheerful little shrub, and as much might be said perhaps of D. Mezereum var. autumnalis, but the Mezereums, on the whole, do not flourish here as they do in the cottagers' gardens. A delicate, Hawthorn-like fragrance is emitted on fine days, even now, by that latest of all the Escallonias, E. montevidensis. As a rule, this shrub flowers earlier, but the wintry weather of October held back the bud clusters, and these have responded to the more genial conditions more recently experienced. That October frost, however, caused irremediable damage to some shrubs, notably Pieris formosa, whose promising sprays of buds have all since fallen. P. japonica, in a rather more sheltered place, did not suffer so badly, and P. floribunda, which is, of course, perfectly hardy, is now in full bloom.

Though it is late to speak of autumn tints, one of the last shrubs to lose its leaves proved, this year, at any rate, to be one of the most generous in colour. I refer to Neillia opulifolia var. lutea. This variety may lose much of its golden hue in summer, but the young spring leafage is decidedly pretty, and the specimen referred to carried a wealth of yellow, so pure and rich, that it was not equalled by any other shrub in the garden.

The Veronicas of the speciosa class are always reliable and pleasant during autumn, and right into winter should the weather remain fairly open. These suffer here in seasons when frost is severe, but beneath the branches of tall Oaks they get some protection, as do a few of the choicer varieties against a wall. Simon Delaux, rich crimson; Gauntlettii, salmon-crimson; Mont Blanc, a really good white, and the deep, wine-purple Purple Queen, are among the best of these grown here. These Veronicas are not easy subjects to place, especially in a woodland garden. They do not seem to blend happily with other shrubs, and perhaps appear to better advantage in conjunction with masonry.

A shrubby Veronica of about two feet that came here labelled, if memory serves me right, Eversly Seedling, is a most remarkable bloomer. What its origin is I do not know, but its very narrow leaves and habit closely resemble those of V. Aoira. But unlike the latter, which flowers only once, and that in summer, this hybrid commences to flower in spring and carries-on with hardly a break until we are nearing Christmas. The flower spikes, nearly two inches long, are a very bright purple. It is as hardy here as V. Traversii.

That remarkable shrub Daboecia polifolia var. alba is still carrying a quantity of blossom, it having been in full bloom since May, and that in very dry, poor soil. In addition to this there is not much blossom in the Heath garden, though E. stricta is still in bloom, and E. darleyensis just breaking bud. The rose-pink flowers of the former, together with the rusty-brown of the faded corollas, make a very charming colour effect against the curiously fresh green of that species. The spent flowers on several of the taller white varieties of Calluna vulgaris are also by no means to be passed by at this season. Though the calyces are an ashen white, they are very striking against the beautiful moss green of such a variety as C. v. alba Serlei.

The genus Calluna also gives us the best varieties viewed solely as winter-foliage plants. Such kinds as C. v. aurea, a bright gold, and C. v. cuprea, in a warm blend of gold and copper, are distinctly ornamental and worth a place, and that a good one, in any Heath garden. Though the Tree Heaths are not yet fully in flower, Erica Veitchii is well ahead of its nearer allies, and is already adorned with several sprays of bloom. This is a hybrid raised by Messrs. R. Veitch and Son and although the parents are not definitely known, they may be assumed to be E. arborea and E. lusitanica, for the plant has characters intermediate between these species. The flowers are white. It is a plant of more vigorous growth than either of its parents.

Few berrying shrubs are more delightful at this time of year than the hybrid Pernettyas, their gay clusters of fruits having a telling setting in the lustrous, dark green foliage. It is still a matter of amazement why these cheerful winter shrubs are not more often seen in gardens. They appear to be shy fruiters in some places, but where they do well nothing of the kind is more attractive than their bright colours, which include various shades of purple and crimson, lilac, shell-pink and white. And these fruits, often half-an-inch across, being indifferent to frost and rarely touched by birds, usually remain on the bushes until the flowering season comes round again.

In the rock garden there is one little shrub which is so prolific of flower that it even now expands some of its many waiting buds on any fine day. This is Helianthemum umbellatum' with its dark green, Rosemary-like foliage and pretty white flowers. None other of its race is so persistent as this in the matter of blooming, and it has a distinctiveness and unusual charm of its own, even in a race full of good things. *A. T. Johnson, Ro Wen, Conway, N. Wales.*

NOTES FROM WISLEY.

A visit to the Heath Garden is seldom void of interest; even at the present time, in spite of winter's chilling grip, plenty of flowers are to be found in this section. Erica carnea is in bloom as well as its varieties, Pink Beauty and E. carnea alba, although they will not be at their best for some time to come. The old flowers of the majority of Heaths still persist, and make a chequered brown carpet in which the lighter patches are formed by clumps of Erica vagans alba and the darker, nut-brown hues by such Heaths as E. stricta and E. ciliaris. The old flowers of E. vagans grandiflora now give the impression of little orange berries, and are still most ornamental. The same, however, cannot be said of the common Heather and other varieties of Calluna, which at this time of year present an extremely shabby appearance. Of dwarf shrubs planted among the Heaths, Polygala Chamaebuxus, with its dull purple and yellow flowers, is conspicuous.

In the Berberis plantation the hybrid Autumn Beauty, which a month ago was attracting attention on account of its beautiful berries, is still conspicuous by reason of the now scarlet foliage. Another Barberry noteworthy in this respect is B. concinna. It is dwarf, slow-growing, and seldom bears much fruit, but almost every shade of green, red, yellow and purple is to be seen in its leaves. When the foliage drops, most of the leaves fall face downwards, exposing their silver reverse, and the surrounding soil becomes quite white as they accumulate.

The white "bloom" on the stems of Rubus biflorus, which occupies the mound opposite the Barberries, is now very marked. The stems of Rubus micranthus also present a white-washed appearance, but the new shoots are free of bloom and coral-red in colour. White bloom is seen to a lesser extent on the older stems of Salix daphnoides (syn. pulchra, ruberrima, the outstanding feature of which is the rich purple of the new shoots. Another handsome-stemmed Willow is Salix coccinea, with bright, red-brown shoots. Among deciduous trees in the Field Garden which still retain their foliage is Pyrus coronaria, the North American Crab. The colour of the leaves is most vivid, as is that of Rhus Cotinus var. atropurpurea.

The new walk between the river and the Pinetum is now in course of construction. It commences at the north-east corner of the Field Garden, and after following the river bank for a considerable distance, will eventually link up with the new Rose trial grounds. A feature of the new arrangement will be an Oak bridge which is to be built to replace the existing structure that carries the public foot-path across a small stream. The ground beneath the bridge is being adjusted in order that the new walk may pass right under it.

Alterations are also in progress in the vegetable garden, a large portion of which is now to be devoted to flower trials. This area is being divided into seven sections by means of Hornbeam hedges, which are now being planted. It will contain trials of Phloxes, Aquilegias and annual Poppies. The Bearded Iris trial will also be in these quarters, together with a collection of Tulip species and hybrids which belonged to the late secretary of the R.H.S., Mr. W. R. Dykes.

In the rock garden the lilac-flowered Crocus longiflorus var. melitensis and C. Boryi (syn. marathonisius), which has white flowers with a yellow base, are blooming quite as strongly as they are in the alpine frames, while in the same border the seed heads of Allium carinatum, which finished flowering more than two months ago, are still ornamental in account of their purple colouring.

The plants in the new alpine house are already giving evidence of appreciation of the better conditions by their rapid growth, and among them the following Saxifrages are already in bloom: S. Kellereri, S. Burseriana, S. hypnoides, S. marginata var. Rocheliara, and Kabschia hybrids such as Ada and the pretty, pink-flowered Perle Rose. Plants of Soldanella montana and of Primula floribunda Isabella, and P. Purple Splendour, are also flowering.

A few of the scented-leaved Pelargoniums, of which there is now a comprehensive collection at Wisley, are commencing to bloom, including Rollisson's Unique, with rich puce blooms, P. Shrubland rosea, the cherry-red Shottesham Pet, and P. Stapeltonii. Few, if any, of the varieties as yet in flower possess fragrant foliage, while the scent of the one last mentioned is extremely unpleasant

The first of the Lachenalis to flower are L. pendula and the very similar L. pendula superba, with red flowers, tipped with green and purple. The leaves are not spotted as in many varieties, but red spots figure prominently on the flower stems. In the trial of Nerines later-flowering varieties, such as the strong-growing, pink-flowered N. Mansellii and N. Rohais, with salmon-scarlet blooms, are the brightest plants in the greenhouses. *J. E. G. White.*

NOTES FROM ABERDEEN.

At this season of the year there are few flowering plants to brighten the outdoor garden, although some Christmas Roses are already in flower. In view of this scarcity, two shrubby Veronicas, now in flower, are all the more welcome. The first of them, well enough known and valued in gardens, is Veronica Andersonii. Its fine, dark green foliage and deep purple flowers harmonise well together, and it deserves the popularity it enjoys. V. Andersonii variegata is a variety well worth growing on account of the brightness of its variegated, leaves. The other Veronica, V. parviflora, does not appear to be so widely cultivated, but it is of a light and graceful appearance and one that has been in bloom for the past two months, the pink flowers being produced in slender heads. It is eminently suitable, together with V. Andersonii, for cultivation in the rock garden, where it should be given a prominent position.

In the glasshouses a more varied selection of flowering plants is to be found. Of greenhouse subjects, Berberidopsis corallina calls for notice, as it has flowered, and continues to flower, very well. Another plant which has given a good account of itself is Camellia Sasanqua, which has produced its pink flowers, with their numerous golden stamens in the centre, with great freedom. This species appears to do better under glass, although it is quite hardy at Edinburgh, where there is a specimen on a west wall, but in that position never seemed to flower. In favoured parts of the south of England I believe it is grown and flowered outside quite satisfactorily. Some time ago, there was some interesting correspondence on the fruiting of Camellias, and it may therefore be of interest to record that a variety of Camellia japonica ripened a fruit here, under glass, from which six good seeds were obtained.

The Melastomaceae have been so often commended in these notes that it is rather unfortunate Oxyspora paniculata cannot be added to the list. As a foliage plant it is very handsome, but as a flowering plant it is not striking. The flowers are produced terminally, and are deep pink in colour, but small, and not showy.

For showy flowers at this time, however, Epiphyllum Russellianum is hard to beat. This is a curious succulent plant of drooping habit, easily propagated by cuttings, and producing a quantity of rosy-pink flowers which make a brave show in the greenhouse. Epiphyllums are sometimes grafted upon stems of Pereskia aculeata so as to form weeping standards, in which form they are very attractive.

Another free-flowering succulent plant is Crassula lactea, a species of trailing habit with thick, dark green leaves, while the purity of the heads of white flowers well justifies the specific name conferred upon this member of the genus.

The note on Aloe Greenii in *The Gardeners' Chronicle* for December 4, 1926, p. 447, was interesting. This species flowered well here during the autumn. Our finest specimen was three feet across, and about a foot in height. The flowering stem was about three-and-a-half feet long, and bore seven erect branches. It is certainly a species well worth growing. *Robert H. Jeffers.*

ALPINE GARDEN.

ARMERIA VINDICTIVE.

Of all the smaller Thrifts, A. Vindictive is certainly one of the most noteworthy. Its origin appears to be a mystery, but that matters little, for this variety is a dwarf Thrift of very compact growth, with vivid, ruby-crimson flowers on six-inch stems, and a reputation for most prolific blooming. The later spring is its best season, but A. Vindictive is seldom out of flower. With me, it begins before any of the others—even before A. caespitosa—and it usually carries quite a show of blossoms right into the late summer. It appears to thrive in the poorest of dry, gritty soils as well as in good loam. As a wall, or rock, plant it is quite at home, and it makes a most delightful edging for a formal bed or border. Few plants are more easily raised from cuttings, any little bit detached from the side of the clump soon taking root in a closed frame. Propagation should take place in July, and plants so raised will usually flower the following year.

A PRETTY NATIVE ROCK PLANT.

The Horseshoe Vetch (Hippocrepis comosa) is a common plant in many districts, especially on limestone cliffs, but it is not nearly as common as it might be in the rock garden, for which it is an ideal subject. It is a prostrate plant, delighting to drape a sloping rock with its elegant, pinnate leaves, which form a dense but neat and compact mat of glaucous green. A healthy specimen will in this way cover a space eighteen inches or more in length and width. This beautiful soft green sward makes a telling setting for the coronets of rich golden-yellow Clover-like flowers, which are so liberally borne from early summer onwards. The full-toned yellow of these charming blossoms is further accentuated by the upper petals being streaked with brown. Give H. comosa a sunny, well-drained spot, preferably with some limestone or old mortar at the roots, and a gently sloping rock to creep over, and it will take care of itself for years. I have never known this little plant to offend by trespassing underground as some of its relations are apt to do.

CLAYTONIA AUSTRALASICA.

One of the best of plants for growing between slabs, bricks or other paving material is Claytonia australasica. This little southerner is perfectly hardy, and it excels as a subject for paved paths and steps because it runs freely and delights in being squeezed between the chinks of stones, while under the latter its roots can get the coolness they want. Furthermore, C. australasica never grows too tall. All it does is to make a close, green turf with its one inch to two-inch grass-like leaves, and this in spring and early summer is studded with pearl-white flowers about half-an-inch across, nestling in the green. Owing to its habit of running underground with some vigour this Claytonia is not a plant to place too near anything precious and small, but for such purposes as I have suggested it is an ideal subject. *A. T. J.*

GENISTA SAGITTALIS.

This Genista, which is commonly known as the Arrow Broom, is a most useful and interesting plant for the rock garden. This south European species blooms in May and June and is not difficult to cultivate, provided it is planted in well-drained, rather poor soil.

A suitable place may easily be found for it on the rock garden, for instance, near a sunny rock or large stone, where it would get both warmth and free drainage. Moreover, it would be seen to better advantage than if planted on the level. If the rooting medium is of a heavy nature, it should be lightened by the addition of old mortar-rubble, stone chippings and similar materials. The plant will flower much more freely in a sunny spot than even in semi-shade. It grows about six inches high, is quite prostrate, and for this reason deserves consideration for draping or partially covering huge rocks or ugly stones.

The stems are winged or flanged like an arrow, and the yellow flowers are produced in a terminal, leafless spike. In a year or two a delightful patch may be obtained, and plants in full bloom are particularly attractive, although, on account of the peculiar growth, interesting at all times.

Propagation is effected by cuttings made from non-flowering shoots in August or September; they will root readily in a cold frame. *T. W. B.*

HARDY FLOWER BORDER.

PHLOX DIVARICATA VAR. LAPHAMII.

This is a most charming plant when thriving, and well worth its place either in the garden or rockery. It is very attractive with its large, delicate lavender blossoms which last a long time in beauty, no matter what the weather may be.

This delightful Phlox may also be grown in pots and is quite decorative, its height being about one foot.

The floriferous specimen illustrated in Fig. 221 was supported with short twigs from the spray-wood of Pea-sticks; it is two years old and carried hundreds of flowers in early May. A little loam of not too stiff a nature, mixed with coarse river sand and a small amount of leaf-mould was dug in deeply on a south border, and proved to be ideal for the plant.

When selected to be grown on the rockery, P. divaricata var. Laphamii should be allowed to grow prostrate, as all the flowering heads will grow upwards and cover the area with their blossoms.

Our plants at Coombe House were propagated in three-and-a-half-inch pots, nine in a pot, in August; these were potted up in January, singly, in the same sized pots; all were transplanted in March, and flowered early in May. The following season the result was as is shown above.

Rabbits are extremely fond of this Phlox and will destroy it where they can have free access to it. *Mark Mills.*

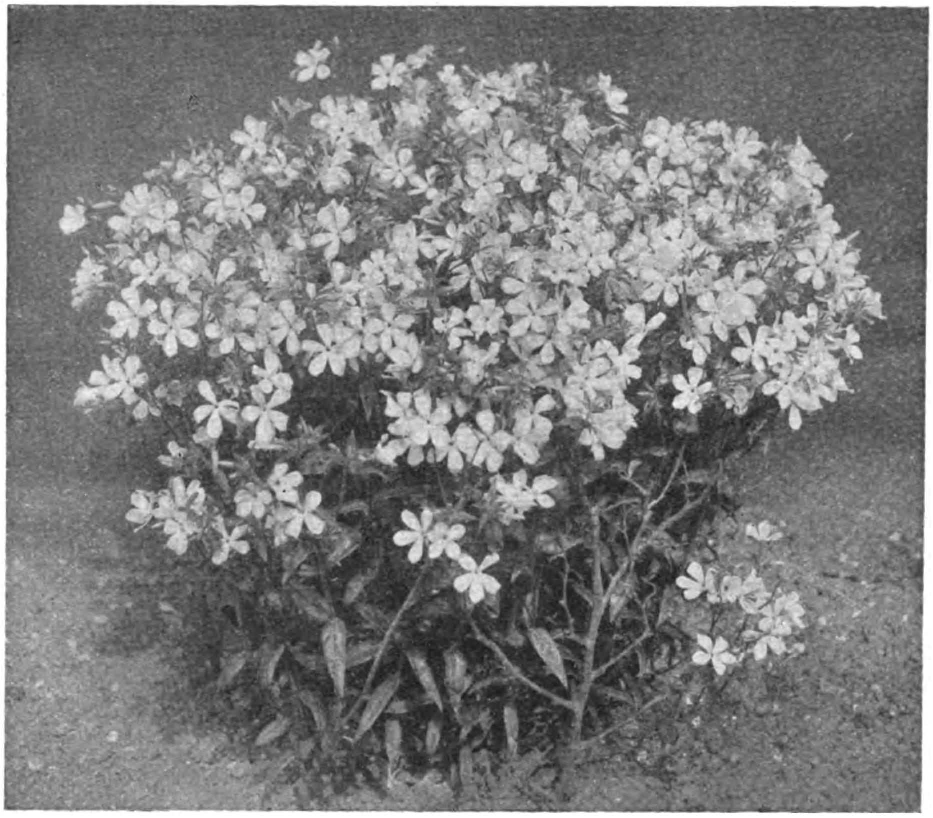

FIG. 221.—PHLOX DIVARICATA VAR. LAPHAMII.

BULB GARDEN.

A NOTE ON GLADIOLI.

Controversy has often waxed so warmly in regard to the proper classification of Gladiolus floribundus, ramosus, Gandavensis, Childsii, Colvilli, Herald, Langprim, Nanus, Giant-flowered, etc., and other groups of Gladioli, that the mind of the amateur becomes bewildered with the multitude of varieties and classifications now to be found in seedmen's catalogues.

Surely the time has arrived when classifications based on sources of origin might well be dispensed with and a few clear divisions made, divisions which shall be understandable to people whose minds turn to their gardens ever and anon and who have neither time nor inclination to commit cumbersome names to memory and do not care whether a flower had its origin in Langport or Ghent, Asia Minor or Natal, so long as it is of the size, colour and type of growth they desire. 'Surnames' are bad enough, but the multitude of 'Christian' names is even more wildly confusing! For my own part, I would like to see an official standard classification of up-to-date varieties on some such lines as the following:—

(1) Gladiolus "Major."—Flower spikes exceeding, say, two feet normal height, possessing flowers exceeding "X" in size, and which do *not* exhibit the hooded petal characteristic of the Primulinus varieties.

(2) Primulinus as at present known.

(3) Nanus varieties under a new name, such as 'Dwarf Perennial,' to distinguish them from classes (1) and (2), and I would like to see the National Gladiolus Society under its able and energetic Secretary, Mr. Amos, compile a list of "too much alike" varieties, with the best variety of given colours indicated. Gladioli multiply by seed and division with such surprising speed that they are fast approaching the time when names will be as the sands of the sea, and individuality lost in the crowd. We need an official list of varieties with an official one, two, or three stars of merit.

During the past season, I grew trials of over 250 named varieties. My choice among these (high-priced novelties excluded) was as follows; stars indicating comparative merit.

LARGE-FLOWERED.—Bleriot, xxxx; Clear Eye, xxx; Cracker Jack (Schoot), xxxx; Conqueror, xx; Dawn, xxx; Chris, xx; Energie, xx; Faust, xx; Flora, x; Glory of Noordwijk, xxx; Imperator, xxx; Jacoba van Beiren, xxx; Lucie, xx; Lucifer, xx; Meilust, xx; Myrtle, xxx; Master Wieste, xx; Mrs. C. P. Alkemade, xx; Mrs. Velthuys, x; Neutrality, xx; Panama, x; Pfitzer's Triumph xxxx; Prince of Wales, xx; Pride of Hillegom, xx; Pride of Haarlem, xx; Peace, xx; President Carnot, xx; Red Emperor, xxx; Rev. Ewbank, xx; Rose Luisante, xx; Vesuvius xx; Vesta Tilley, xx; Venus, xxxx; Willie Wigman, xx; White Giant, xx; and Yellow Standard, xx.

PRIMULINUS or HOODED FLOWERS.—Alice Tiplady, xxx; Delicata, xx; Feu Ardente, xx; Fire Queen, xx; Gerbe d'Or, x; L'Innocence, xx; Primrose Beauty, xx; Rose Beauty, xx; Scarletta, xx; Sunrise, xx; Triumph, xxx; and Vanessa, x.

The following, grown side by side with the above, did not exhibit sufficient merit to warrant retention as named varieties.—Apricot, Aurora, Blue Bird, Buttercup, Copex, Enchantress, Fleuve Jaune, Flava (very poor), Golden Goblet, Hesperia, Icarus, Ideal, Kerensia, Laetitia, Latonia, L'Unique, lutea pallida, Maiden's Blush, Niobe, Pink Beauty, Rosaura, Rose Pearl, Sphinx, Thelma, Vinula, and Vesuvius (primulinus).

My experience is that too much emphasis cannot be laid on the need for moisture and rich feeding for Gladioli. The plants prefer an open, sunny situation, and a deep, retentive soil, well manured and deeply dug in autumn. A mulching of decayed manure three inches deep applied in early summer, will make all the difference between average and exhibition flowers. It is not generally known that corms stored in a cool, dry place may be planted in batches until the first week in June, and that, by this means, a continual succession of flowers of the same variety may be obtained until the late autumn. Remember the Gladiolus starts from a dry corm and, unlike the Hyacinth, has to produce its flower and stem *in toto* from nourishment collected by its shallow roots. *Herbert G. Longford, Abingdon, Berks.*

THE IMPORTATION OF DISEASED BULBS.

Lest there should be any misunderstanding in the matter, let me say at once that nothing in this article is intended to be personal or disparaging in regard to either persons or Departments concerned.

The British Board of Agriculture and Fisheries, doubtless with good original reason and intention, have issued a fiat that no flower bulbs are to be imported into this country from Holland without a certificate that the consignment has been examined and found free from disease, signed by an inspector of the Phytopathological Department of the Dutch Government. How, then, does it happen that diseased Dutch bulbs are to be found throughout the country? Bulbs flourish in Holland—and so do pests and diseases of all kinds in spite of Government departments. The inspectors have open access to the fields and warehouses of exporters, and can, and do, exercise their authority to condemn diseased stocks when they find them. Their method is to wander through stocks of bulbs and cut one open here and there. With Narcissi, a slice is cut off the nose of the bulb so that it may not be injured if sound. In spite of this, the fact remains that diseased stocks do come over, and are distributed with disastrous results. The cause of this is not far to seek. There exists in Haarlem a Bulb Exchange, and there are non-exporting individual producers and firms on every hand. More often than not, exporting firms sell in excess of their stocks and have to buy from such local producers. While such buying is done in good faith, the actual handling of the bulbs is done by warehousemen and women who are not likely to question the quality of the firm's purchases. It follows that, unless the inspector stands beside every packer in every exporting warehouse, the certificate subsequently issued is valueless and largely untrue in its statement of the fact that the contents of the consignment have been inspected. So far as I am aware, there is no official check on the sale and exchange of Dutch bulbs within the country of origin, nor is it part of the inspector's duty to personally inspect the treatment or destruction of diseased stocks.

Diseased bulbs are frequently "destroyed" by growers by throwing them into the dykes adjoining the bulb fields, and by this means the moving water and passing barges spread infection far and wide. If even a blind inspector had superficially examined some of the certified stocks of Daffodils I have seen imported from Holland this year, anything short of total and immediate destruction would have been impossible—for they have been so rotten that they would have stuck to his fingers! The root of the whole matter appears to be that the certificates are made out because the British Government will not allow bulbs or plants to enter the country without them, and undertakes no further examinaton on arrival because they have been "passed" by a Dutch inspector.

No penalty appears to attach to anybody concerned, except the unfortunate purchaser. The moral is to always buy froma firm which will give a full warranty, and will stand by it for a full growing season, and get the warranty before you buy. *Herbert G. Longford,*

VEGETABLE GARDEN.

EARLY POTATOS.

The first new Potatos are always appreciated, and efforts should be made to produce them in advance of the outdoor crops. The crop may be forced in frames placed on mild hot beds, also in pots or boxes in a cool greenhouse or frame. The hot-beds should be made of two parts leaves and one part long stable-litter; turn the materials several times to ensure them being well mixed. The beds should be about two feet wider all round than the dimensions of the frame, to allow of easy working of the lights, and also room for applying fresh fermenting materials when the temperature of the bed is declining. Place the frames on the centre of each bed and let them stand for a few days to settle, and also for the heat to subside. A suitable compost is made of two parts loam, one part leaf-soil, and one part old Mushroom-bed manure passed through an inch sieve, with a good dash of soot and wood ash.

The rough material should be placed on the bed, and the prepared soil on this to within about six inches of the glass. The soil will sink slightly as time goes on, thus allowing room for the tops of the Potatos. In the meantime, the seed tubers should be stood upright in trays or boxes and sprouted in a light, frost-proof structure.

So soon as the heat of the bed is suitable, which may be determined by plunging a thermometer through the soil, the sets may be planted about eight or nine inches apart with a trowel, and the surface of the soil made level. Place the lights in position and admit a little air, both day and night, to allow superfluous atmospheric moisture to escape. The frames should be well-covered at night in frosty weather, but the coverings should be removed so soon in the morning as possible. Directly the young growths push through the soil, stir the surface of the latter occasionally, and admit more air at the top of the frame to promote strong, sturdy growth.

Very little water, if any, will be necessary at this period, as the moisture from the bed will keep the soil damp. When the tops are about four inches high they should have a little soil drawn up to them, and as they continue to grow, some fresh compost should be added, pressing it gently around the stems.

The haulm will by now probably be touching the glass and, if so, the frames should be lifted with the aid of a crowbar placed under each corner, taking care not to lift the soil. The bed outside the frames should then be trodden down, and some fresh fermenting materials added.

The plants will grow very quickly, and if the sun is bright, the soil will possibly need watering, although this can only be determined by the cultivator himself. If found necessary, tepid water from the greenhouse should be used, giving the plants a good soaking. It is surprising how quickly Potatos may be forced in this way. Fresh plantings should be made every fortnight or three weeks, if sufficient frames are available.

As the plants show signs of maturing, the lights should be removed during the daytime, and the supply of water at the roots may be diminished. The tubers will then finish perfectly, and the flavour be much improved.

Pots that have done duty for Chrysanthemums may be used for forcing Potatos with excellent results. They should be washed and crocked and some rough leaves placed on the crocks to ensure good drainage. Three parts fill them with similar compost to that advised for frame culture, and plant three small sets in each of the ten-inch pots, and one medium-sized set in each of the nine-inch pots. Plant the sets about three inches deep and press the soil around them fairly firmly.

The pots may be stood in a cool vinery or Peach-house from which frost can be excluded, and, after a week or so, the soil may be moistened with tepid water.

So soon as the haulm reaches the top of the pots the plants should be top-dressed with light soil and again watered, and as the tops continue to grow they may be supported with twiggy tips of Pea-sticks placed around the edges of the pots.

Water should be applied as it is needed; Potatos in pots and boxes require more water than those in frames, as there is not the atmospheric moisture arising from the hot-bed.

Any kind of box is suitable for forcing Potatos, provided it is not too deep, and practically the same method as advised for pot culture will answer well. *R. W. Thatcher, Carlton Park Gardens, Market Harborough.*

FRUIT GARDEN.

FRUIT TREES AND LIME.

Lime is deficient in many soils, and its periodical application in some form or other becomes necessary, for fruit trees in general and stone fruits in particular are quick to suffer if any deficiency is not rectified.

Its value in ameliorating the working of some soils is very considerable, but its great purpose is as a chemical agent. Besides having a marked power of bringing potassic compounds to a soluble state, it seems able to act as a liberator of phosphoric acid by acting on some of the very insoluble phosphates and converting them to phosphate of lime, thus rendering the phosphoric acid more readily available.

Where applications of lime are necessary, the present time, after surface cleanings have been completed, is suitable to give a dressing. If chalk can be procured easily from neighbouring quarries it may be applied at the rate of three or four tons per acre in as fine a state as procurable. If it is very coarse its usefulness will be considerably retarded. Finely-ground limestone, at the rate of one ton per acre, is a preferable dressing, as it comes into contact with a much larger proportion of soil particles, and is thus more certain in action.

The application of quicklime results in the loss of organic matter which can be ill afforded in the case of light soils, moreover, application by hand is often necessary amongst fruit trees, and the burning nature of caustic lime makes it difficult to handle, hence, for general purpose ground limestone is the most desirable form in which to apply lime. *A. P. C.*

HOME CORRESPONDENCE.

Japanese Chrysanthemums at Hull Show.—One wonders whether Japanese Chrysanthemums this year have been generally finer than it is usual to see them, for this autumn they were extra good at the Hull Chrysanthemum Show, and also at York Show, and other noted exhibitions in north-east Yorkshire and Lincolnshire. This does not support the gossiping that big blooms are less appreciated or that their cultivation is less interesting. Indeed, the non-competitive exhibits staged by trade growers contained fine examples of new and large varieties. It is not too much to state that the Japanese blooms shown by Mr. F. J. Fleming, gardener to T. W. G. Hewitt, Esq., Weelsby Old Hall, Grimsby, were perfect in every detail. Mr. Fleming is a proved master-hand in their cultivation, and a most successful exhibitor. His stand of twenty-four Japanese blooms in not fewer than eighteen varieties were extra fine in form and colour and secured for him the first prize, to which is added a five guinea cup, and to this stand was awarded the National Chrysanthemum Society's Certificate of Merit. Appended is a list of some of the best blooms in his exhibit. Queen Mary (white), Mrs. A. Davis (pink), Red Majestic (a flower of much promise), Princess Mary (yellow), Mrs. B. Carpenter (rose), Majestic (which for size and colour was remarkable), Mrs. J. Gibson (extra good). Mrs. R. C. Pulling (lemon yellow), Mrs. Sam Noble (a grand flower), Rose Day (rich pink), Mrs. A. Holden (crimson), Lady Talbot (a perfect flower), Miss Dunstan (white), Mrs. G. Drabble (pure white), Mrs. F. J. Fleming (deep pink), and Harry Clements. Although Mr. Hewitt is a great admirer of Chrysanthemums and appreciative of his gardener s success in growing good blooms, he is ever mindful of the poor inmates at the various hospitals, to whom he presents the whole of his blooms that have been exhibited. *J. P. Leadbetter, East Yorks.*

Polyanthuses.—I was very much interested in a note on Polyanthuses in *The Gardeners' Chronicle*, of November 13, p. 390. Pearson's Alexander was raised by my grandfather, or great-grandfather, I am not sure which, and is always quoted as the finest Polyanthus ever raised. I would give a good deal to get a plant at the present time, but am afraid it is now lost. Mr. Richard Dean told me thirty years ago that it was still grown by one or two people in the Newcastle district, but I have never been able to hear of anyone actually in possession. I believe Chilwell Hero was sent out about the same time, but have no record. *Chas. E. Pearson, Lowdham, Notts.*

Garden Hedges.—In the article on "Garden Hedges" (p. 472), one plant which succeeds with me was not mentioned, viz., Ligustrum ovalifolium. This grows to greater size than the golden, oval-leaved Privet, and the latter is often killed back during the winter (when planted in exposed situations) to the extent of the length of the growth made in summer. Much use is made of the former for boundary hedges to a sunken garden, shelter hedges and screens, for each of which it answers the purpose, and is more suitable than other hedge plants in this locality. A hedge of sufficient length with "battlements". about fifteen inches above the general level, is more pleasing than a continuous flat top. Coniferous subjects are failures as hedges in this seaside resort. Holly, especially Ilex Hodginsii, is a desirable hedge plant for a boundary, and no other variety approaches this one for the purpose here. *B. C., Southport.*

A Winter Rhubarb.—I have pleasure in sending you a few stalks of Rhubarb Glaskin's Perpetual, which I pulled from an exposed part of our grounds to-day. Had it not been for severe frost, the Rhubarb would have been equally good, or better, a month ago. *Robert Fife (Dobbie and Co.), Edinburgh.* [The stalks were eight inches or ten inches long, of rich red colour, and excellent when cooked.—Eds.]

SOCIETIES.

READING AND DISTRICT GARDENERS'.

The last meeting of the winter session was held on Monday, December 13, when Mr. J. R. Lloyd (Vice-chairman) presided over an excellent attendance of the members.

The lecturer for the evening was Mr. W. Chislett, N.D.H., Bill Hill Gardens, Wokingham, and his subject was "Sweet Violets." The lecturer gave full details of propagation, soil, planting, watering, manuring, the prevention of pests, etc. The most suitable varieties for coming into flower at various periods of the year and also for different situations were enumerated. An excellent discussion followed the lecture.

In the competition for three dishes of Potatos there were seven entries and many splendid tubers were shown. The first prize was awarded to Mr. A. H. Dow, Calcot Park Gardens; the second to Mr. A. E. Kirby, Amity Road, Reading; the third to Mr. C. S. Clacy, Sidmouth Grange Gardens, Reading, and the fourth to Mr. A. Priest, Westbourne Terrace, Tilehurst. In the competition for three stems of Brussels Sprouts, Mr. R. G. Taylor, Highgrove Street, Reading, won the first prize with magnificent stems of Sutton's Exhibition; Col. F. E. Mascall, Hughenden, Shinfield Road, Reading, was placed second.

GUILDFORD AND DISTRICT GARDENERS'.

At the meeting of this association, held on December 13, Mr. E. R. Janes delivered a lecture on "Sweet Peas."

For about fifty minutes, without the aid of a single note, the speaker held his audience in close attention. Mr. Janes said it was astonishing the hold Sweet Peas had obtained on practically everybody, and no less astonishing to see so many badly-grown specimens, which, no doubt, was brought about by haphazard methods of culture. Deep digging and good tillage were necessary to promote an extensive root-system, both in depth and in lateral development. Manuring at the time of planting was not recommended. Sweet Peas, said Mr. Janes, should not be coddled in cold weather. They are hardy plants and survive cold and frosty weather to a surprising degree. Planting in September rather than in October was advised, and the advantage of autumn sowing over spring sowing was explained.

At the close of the address a number of lantern slides were shown to illustrate the various points which had been brought under review.

The President, Alderman W. T. Patrick, J.P., thanked Mr. Janes for his excellent lecture.

Before the meeting closed, a collection was taken to augment the fund raised by Mr. W. Auton in aid of The Gardeners' Royal Benevolent Institution, and the Royal Gardeners' Orphan Fund, and a sum of £3 10s. 0d. was obtained. The next meeting, on Thursday, January 13, will take the form of a social gathering. By that date it is anticipated the membership will have reached one thousand.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT.

The monthly meeting of this Society was held at the Royal Horticultural Hall, on Monday, December 13, Mr. T. R. Butler presiding. Twelve new members were elected, three members withdrew interest amounting to £11 10s. 6d., two members withdrew sums totalling £68 2s. 11d., while £140 6s. 3d. and £36 7s. 10d. respectively, were passed for payment to the nominees of two deceased members.

Grants were made to three members from the Distress Fund, and £65 13s. 9d. was granted to State Insured members towards the cost of dental and optical treatment, and several other cases were considered.

The sick pay for the month on the Ordinary side amounted to £86 9s. 0d., and on the State Section to £87 5s. 8d., while maternity claims amounted to £15 0s. 0d.

Obituary.

Fred W. Curry.—Death has robbed the Covent Garden flower industry of one of its most popular salesmen, Mr. Fred W. Curry. For many seasons Mr. Curry had occupied a warehouse opposite our old offices in Wellington Street. He was the son of Mr. Edward Curry, of Edmonton, whose portrait we gave in our issue of March 21, 1925. Mr. Fred Curry suffered a nervous breakdown some time since and appeared to have recovered therefrom, but he was taken ill again about a fortnight ago and died suddenly on Saturday, December 18. He leaves a widow and young family to mourn an irreparable loss.

James Cunningham Fraser.—By the death, on November 18, of Mr. James Cunningham Fraser, of Messrs. Cunningham, Fraser and Co., Comely Bank Nurseries, Edinburgh, there has passed away the last representative of the founders of this old firm, which was established in 1810. For a long period, Comely Bank Nursery held an unique position in Scotland as the abode of rare alpines and other uncommon plants, to which connoisseurs made periodical pilgrimages in their search for novelties, and in the alpine department it still holds a leading place. Mr. Fraser, who was sixty-five years of age, had been in failing health for some years, and he died at Elie, in Fifeshire, where he latterly resided in semi-retirement. Mr. Fraser was an only son, and was unmarried.

Adam McAdam.—Horticulture has lost a highly respected and esteemed servant by the death of Mr. Adam McAdam, which took place during the past week in an Aberdeen nursing home, where a few days previously he underwent an operation. Born at Rothes, Morayshire, sixty-three years ago, Mr. McAdam's life's work was spent mainly as gardener with Mr. J. F. Cumming, O.B.E., Convener of the County of Moray, first at Cardow, and latterly at The Dowans, Aberlour, Banffshire. He took a prominent part in all that pertained to the advancement of horticulture and was a very successful exhibitor at all the local shows. An ardent volunteer in his young days, he figured prominently as an expert marksman, winning many trophies. He held the Long Service Medal. Mr. McAdam is survived by a widow and grown-up family.

ANSWERS TO CORRESPONDENTS.

Names of Plants.—*E. C. V. G.* 1, Picea orientalis; 2, Cupressus pisifera var. filifera; 3, Cedrus Deodara; 4, Cephalotaxus Fortunei; 5, Azara microphylla, 6, Pancratium ovatum; 7, Cupressus funebris; 8, Abies brachyphylla; 9, A. nobilis; 10, Picea pungens var. glauca.—*A. E. M.* Camellia Sasanqua variety. There are numerous varieties of this species.—*J. I. S.* Ornithogalum lacteum (the Chinkerichee).—*J. S. G.* Juniperus chinensis.—*F. W. R.* Cedrus atlantica.—*C. F. and S.* We regret we cannot undertake to name florists' flowers.—*E. T.* 1, Cupressus Lawsoniana; 2, C. L. var. erecta viridis; 3, C. pisifera var. plumosa; 4, Juniperus chinensis; 5, Cupressus macrocarpa; 6, C. Lawsoniana var.; 7, C. pisifera var. plumosa aurea; 8, Sequoia sempervirens; 9, Taxus brevifolia; 10, Pinus austriaca; 11, Euonymus europaeus; 12, Quercus Ilex.

Communications Received. — H. J. P. — W. A. — J. C. D.—W. C.—W. S. C.—A. T. H.—H. G. L.—C. T. —C C. R.—W. R.—H. S. P.—A D. B.

TRADE NOTE.

Readers requiring information and advice respecting Patents, Trade Marks or Designs, should apply to Messrs. Rayner and Co., Patent Agents, of 5, Chancery Lane, London, who will give free advice to readers mentioning *The Gardeners' Chronicle.*

MARKETS.

COVENT GARDEN, Tuesday, December 21st, 1926.

Plants in Pots, etc.: Average Wholesale Prices.

(All 48's except where otherwise stated).

	s. d.	s. d.
Adiantum cuneatum per doz. ...	10 0	12 0
—elegans ...	12 0	15 0
Aralia Sieboldii	9 0	10 0
Araucarias, per doz.	30 0	42 0
Asparagus plumosus ...	12 0	18 0
—Sprengeri ...	12 0	18 0
Aspidistra, green	36 0	60 0
Asplenium, doz.	12 0	18 0
—32's	24 0	30 0
—nidus ...	12 0	15 0
Cacti, per tray —12's, 15's ...	5 0	7 0
Cyclamens, 48's, per doz. ...	18 0	21 0
Chrysanthemums, in variety, 48's, per doz. ...	18 0	30 0
Crotons, doz. ...	30 0	45 0
Cyrtomium ...	10 0	25 0

	s. d.	s. d.
Erica gracilis, 48's, per doz.	24 0	36 0
—60's, per doz.	9 0	12 0
—hyemalis, 48's, per doz. ...	24 0	30 0
—60's, per doz.	12 0	15 0
—nivalis, 48's per doz. ...	24 0	36 0
—60's „ ...	12 0	15 0
—72's „ ...	8 0	9 0
Hydrangeas, white, 48's per doz.	24 0	30 0
Nephrolepis in variety ...	12 0	18 0
—32's	24 0	36 0
Palms, Kentia	30 0	48 0
—60's	15 0	18 0
Pteris in variety	10 0	15 0
—large, 60's ...	5 0	6 0
—small ...	4 0	5 0
—72's, per tray of 15's ...	2 6	3 0
Solanums, 48's, per doz. ...	12 0	18 0
—60's, per doz.	9 0	10 0

Cut Flowers, etc.: Average Wholesale Prices.

	s. d.	s. d.
Adiantum decorum, doz. bun.	15 0	18 0
cuneatum, per doz. bun. ...	10 0	12 0
Asparagus plumosus per bun., long trails, 6's ...	2 6	3 6
med. sprays	1 6	2 6
short ...	0 9	1 3
—Sprengeri, bun. long sprays	1 6	2 0
med. „	1 0	1 6
short „	0 4	1 0
Bouvardia, white per doz. bun.	12 0	15 0
Camellias, 12's, 18's per box...	2 6	3 0
Carnations, per doz. blooms...	6 0	8 0
Chrysanthemums, white, per doz.	4 6	7 0
—bronze „	4 0	6 0
—white, per doz. bun. ...	18 0	21 0
—bronze, per doz. bun. ...	15 0	21 0
—yellow, per doz. blooms ...	4 0	6 0
—yellow, per doz. bun. ...	18 0	30 0
—pink, per doz. blooms ...	4 6	6 0
—pink, per doz. bun. ...	15 0	18 0
—red, per doz. blooms ...	3 6	5 0
— — per doz. bun.	18 0	21 0
—specimens, per doz. blooms...	15 0	18 0
Croton leaves, per doz. ...	1 9	2 6
Fern, French, per doz. bun.	10 0	12 0
French Flowers—		
—Acacia (Mimosa), per doz. bun.	12 0	15 0
—Eucalyptus, per pad	6 0	7 0
—Ruscus, green, per pad ...	6 0	8 0
—Myrtle, green, per doz. bun.	1 6	2 0
—Narcissus, Paper White, per doz. bun.	5 0	6 0
—Solanum berries. 300's, per pad	10 0	12 0

	s. d.	s. d.
French Flowers—		
—Violets, Parma, per bun. ...	5 0	7 0
Gardenias, 12's, 18's per box .	6 0	8 0
Heather, white, per doz. bun.	6 0	9 0
—pink, per doz. bun. ...	6 0	8 0
Honesty, per doz. bun. ...	15 0	18 0
Hyacinths on bulbs, per doz.	12 0	18 0
Lilac, white, per doz. stems ...	6 0	8 0
Lilium longiflorum long, per doz.	8 0	9 0
—speciosum rubrum, long, per doz. blooms ...	4 6	5 0
—short, doz. blooms ...	2 6	3 0
Lily-of-the-Valley, per doz. bun.	30 0	36 0
Marguerites, yellow, per doz. bun.	2 6	3 0
Orchids, per doz.		
—Cattleyas ...	24 0	36 0
—Cypripediums per doz. blooms ...	6 0	8 0
Poinsettias, per doz. blooms ...	21 0	30 0
Ranunculus—		
—double scarlet	8 0	9 0
—yellow ...	12 0	15 0
Richardias (Arums), per doz. blooms .	12 0	15 0
Roses, per doz. blooms—		
—Madame Abel Chatenay ...	5 0	6 0
—Molly Sharman Crawford	5 0	6 0
—Richmond ...	10 0	15 0
—Golden Ophelia	10 0	12 0
—Madame Butterfly	12 0	15 0
—Safrano, 24's per packet ...	3 0	3 6
Smilax, per doz. trails ...	3 0	4 0
Tulips on bulbs, per doz. ...	3 0	4 0
Violets... ...	3 0	4 0

REMARKS.—Business promises to be brisk during the present week, and prices for most subjects have advanced considerably. Roses have already reached a high figure, the supplies becoming much shorter. There is likely to be a limited number of Carnations, Lilium longiflorum, Richardias (Arums) and Lily-of-the-Valley. The supply of Chrysanthemums, so far, is well maintained, although prices generally are firmer for best disbudded blooms and sprays in bunches. Good spray bronze and spray yellow are the shortest subjects. Roman Hyacinths and Tulips on bulbs are selling freely. Daffodils are not yet available, although numerous enquiries have been made for these flowers. There is likely to be a shortage of Christmas Roses for the Christmas week. A few large-flowered Hyacinths are arriving in good condition, but these are generally high in price. Poinsettias are required for decorative purposes and are making high prices owing to a limited supply. White and mauve Lilac, also a few sprays of Prunus are arriving from Holland in good condition. Flowers from France are receiving more attention. The quality of Paper White Narcissus and Violets is much improved; there is a shortage of Anemones and Ranunculuses. Mimosa (Acacia) is generally poor in quality, also Marguerites, but Marigolds are arriving in a much better condition than hitherto.

Fruit: Average Wholesale Prices.

	s. d.	s. d.
Apples, American—		
—York Imperial per barrel ...	20 0	24 0
—Ben Davis ...	20 0	24 0
—Albemarle ...	30 0	32 6
—Oregon Newtown	11 0	12 0
— —Winesap ...	10 0	10 6
—Rome Beauty	9 0	10 0
—Nova Scotian—		
—Ribston Pippin, per barrel ...	20 0	25 0
—Blenheim Pippin, per barrel	22 0	26 0
—Starks, per barrel... ...	18 0	20 0
—Others ...	18 0	20 0
Apples, English—		
—Newton Wonder ...	10 0	14 0
—Bramley's Seedling	10 0	20 0
—Californian Newtown Pippin	9 0	10 6
— —Winesap ...	9 0	10 0
— —Winesap per barrel ...	20 0	22 0
Bananas ...	23 0	32 6
Brazils, per cwt.	80 0	85 0
Chestnuts, Redon, per bag	10 0	14 0
—Italian ...	15 0	16 0
—Naples ...	—	21 0
Cob nuts, per lb.	0 6	0 7
Grape Fruit—		
—Blue Goose ...	25 0	30 0
—British Honduras ...	—	25 0

	s. d.	s. d.
Grapes, English—		
—Guernsey Alicante	0 8	1 0
—Gros Colmar	1 6	3 6
—Colmar ...	1 3	3 6
—Alicante ...	1 6	3 6
—Muscat ...	8 0	12 0
Grapes Belgian	1 6	2 0
—Colmar Muscat	5 0	6 0
—Almeria ...	16 0	30 0
—Algerian Navel, per tray ...	7 0	8 0
Lemons, Messina, boxes ...	12 0	18 0
—cases	20 0	30 0
Oranges—		
—Denia ...	16 0	30 0
—Valencia ...	18 0	22 0
—Jamaica ...	21 0	22 0
—Algerian ...	6 6	8 6
Peaches, Belgian per doz. ...	8 0	20 0
Pears, English—		
—Belgian Comice, per doz. ...	6 0	12 0
—Special, per doz.	4 0	10 0
Pears—		
—Californian Comice—cases ...	25 0	30 0
—Winter Nelis, case	25 0	30 0
—Beurré D'Angou, case ...	25 0	30 0
Pines, case ...	20 0	36 0
Walnuts, Grenoble ... bag .	11 0	14 0
—Naples, kiln dried	80 0	90 0

Vegetables: Average Wholesale Prices.

	s. d.	s. d.
Asparagus, Devon	5 0	9 0
— —Paris Green	9 0	10 0
Beans—		
—best	4 0	5 0
—ordinary ...	2 0	3 0
Beets, per cwt.	5 0	6 0
Cabbage, per doz.	2 0	2 6
Carrots, per ½-bag ...	4 0	5 0
Cauliflowers—		
—English, doz.	3 0	5 0
—St. Malo, crate	6 0	8 0
Celery, fans ...	1 6	2 6
Cucumbers, per doz.	20 0	27 0
French Batavia	2 6	3 6
French Endive, per doz. ...	2 6	3 0
Lettuce, round, per doz. ...	1 6	2 6
Mint, forced, per doz. ...	4 0	8 0
Mushrooms		
—cups ...	3 0	3 6
—Broilers ...	2 0	2 6

	s. d.	s. d.
Onions—Valencia ...	8 6	10 0
Parsnips, per cwt. ...	4 6	5 6
Peas, Forced, per lb. ...	2 0	3 0
Potatos—		
—King Edward ton	—	£9/10
—others, ton...	£5,	£7/10
Rhubarb, forced, per doz. ...	6 0	7 0
Savoys, per doz.	1 6	2 0
Seakale, per punnet ...	3 0	4 0
Sprouts, Brussels per ½-bag ...	2 6	5 0
Tomatos—		
—Canary Island	20 0	25 0
—English, pink new crop ...	8 0	10 0
—pink and white, new crop ...	8 0	9 0
Turnips, per cwt.	4 6	5 6

REMARKS.—All sections report demand quite up to expectations. Supplies for the Christmas trade have been plentiful, and with prices generally at a "popular" level, buying has been active. Hothouse Grapes have sold well, supplies from English and Belgian growers being sufficient for the demand. A few Peaches from South Africa sold at satisfactory prices, and Plums from the same source also found a good market. Pineapples have been a feature of the fruit market this week, for they are always in demand at this season of the year. Oranges are rather above average from a quality point of view, and supplies were such that prices dropped somewhat abruptly. The few English-grown Doyenné du Comice Pears that are available sell well. English Bramley's Seedling Apples are in demand, and the few fruits of Cox's Orange Pippin available are making high prices. Forced Beans and new Potatos always sell well at this season, and there is the usual Christmas inquiry for Asparagus. Mushrooms do not sell freely just now and supplies are not plentiful. Sprouts and Cauliflowers are in good demand. Salads, also, are keenly inquired for, but with largely increased consignments from France there is a tendency towards lower prices. The trade in old Potatos is firm at the recently advanced prices.

GLASGOW.

THE cut flower trade, which was firm all the week, developed additional strength on Friday, when first-class Chrysanthemum blooms were in good demand at prices which, in certain cases, exceeded the highest values of the present season. Salesmen, however, experienced difficulty in disposing of heavy consignments of inferior blooms from Guernsey and local growers. W. Duckham variety, which ranged in price from 2/- to 2/6 for 6's made 2/11 on Friday; Phyllis Cooper, Bronze Molly and Susan fluctuated between 1/9 and 2/-; Molly and Reginald Godfrey and Tangerine, 1/6 to 2/-; Mary Morris, 1/3 and 1/9; Lucy Louppe, 1/3 to 1/6; Florrie King, Niveus and Western King, 8d. to 10d. The high value of Carnations was maintained at 5/- to 6/- per dozen, and Roses were dearer at 7/6 to 8/- for pink blooms; 6/- to 7/- for red; and 3/6 to 4/6 for white. Lilium longiflorum (Harrissii) was worth from 6/- to 7/- per bunch; and Richardias (Arums) made 8/- to 10/- per dozen. Narcissi realised 4/- to 5/-; Smilax and Asparagus, 1/- to 1/9 per bunch. Berried Holly was plentiful and cheap at 2/- to 3/- per stone, Mistleto was difficult to clear at the low price of 1/- per crate, and Christmas trees sold at 6d. to 1/- per foot. First consignments of Tulips and Hyacinths in pans realised 1/6 to 2/- each for small sizes, and 2/- to 2/6 for large. Bay trees (seven feet) in tubs ranged from 8/- to 10/- each. Solanum berries were worth 8/- to 10/- per cane, and Ruscus 14/- to 16/- per double cane.

There was a moderate increase in the volume of business transacted in the fruit market where price movements were small either way. Apples were 6d. to 1/- per case dearer, Newtown at 13/-, Delicious, 12/-, and Spitzbergen, 10/6. Oranges, on the other hand, were a little cheaper, Jaffas being worth 13/- to 15/- per case, and Valencias varied from 14/- to 20/- per case, according to the count, but 420's averaged 26/-, while Mandarin Oranges ranged from 1/3 (50's) to 2/3 (70's). Prices of Scotch Gros Colmar Grapes were unchanged at 3/6, and English Grapes made 2/3. The residue of the home Tomato crop secured 3½d. per lb. The markets will be closed on New Year's Day.

TRADE MARKS.

THIS list of Trade Marks, of interest to readers, has been selected from the official Trade Marks Journal, and is published by special permission of the Controller of H.M. Stationery Office.

NEOSANTO BRAND.

473,257.—Chemical substances used for Agricultural, Horticultural, Veterinary and Sanitary purposes.—H. R. Napp, Limited, 3 and 4, Clements Inn, Kingsway, London, W.C.2. November 17.

RAINBOW.

473,642.—Seeds for Agricultural and Horticultural purposes.—Rickarby and Partner, 37A, Finsbury Square, London, E.C.2. November 17.

FLIT.

472,269.—Spraying machines and Atomisers, all being for Agricultural and Horticultural use.—Standard Oil Co., Constable Hook, Bayonne, Hudson County, State of New Jersey, U.S.A. November 19.

GARDENING APPOINTMENTS.

Mr. J. Walster for the past five years gardener to Lt.-Col. DARELL, Woolly Grange, Bradford-on-Avon, as gardener to W. F. FLADGATE, Esq., M.V.O., Hollanden Park, Tonbridge, Kent.

Mr. E. Clements for the past four years gardener at Newburgh Priory, Easingwold, Yorkshire, and previously at Trusley Manor, Derbyshire, as gardener to A. J. TAYLOR, Esq., Formby Hall, Formby, Lancashire. (Thanks for 2/6 for R.G.O.F. Box.—EDS.)

Mr. E. C. Pullin for the past four years gardener to SIDNEY HILL, Esq., J.P., Langford House, Langford, Somerset, as Gardener to Miss M. HUNTINGTON, Bricklehampton Hall, Pershore, Worcestershire.

CATALOGUES RECEIVED.

J. W. COLE AND SONS, Peterborough.—Chrysanthemums, Pelargoniums, etc.
PERRY'S HARDY PLANT FARM, Enfield, Middlesex.—Lilies, bulbs, perennials, etc.
BARR AND SONS, 11, King Street, Covent Garden, W.C.2.—Surplus stock of hardy perennials, alpines, etc.
R. WALLACE AND SON, LTD., The Old Gardens, Tunbridge Wells.—Hardy plants.
CROSS AND CO., Wisbech.—Seed Potatos.
D. G. PURDIE, 6, Waterloo Street, Glasgow.—Seed Potatos.
W. POWER AND CO., 25, King Street, Waterford, Ireland. Trees and shrubs.

Seeds.

SUTTON AND SONS, Reading.
J. CARTER AND CO., Raynes Park, S.W.20.
JOHN PEED AND SON, West Norwood, S.E.27.
DOBBIE AND CO., LTD., Edinburgh.
DICKSON AND ROBINSON, Cathedral Street, Manchester.
E. WEBB AND SONS, Wordsley, Stourbridge.
DICKSON'S SEEDS, LTD., Chester.
STEWART AND CO., 13, So. St. Andrew Street, Edinburgh.
LITTLE AND BALLANTYNE, Carlisle.
JOHN KNIGHT AND SON, Wolverhampton.
CLIBRANS, LTD., Altrincham.
R. VEITCH AND SON, 54, High Street, Exeter.

Foreign.

PAUL TEICHER, Striegau. Germany.—Flower seeds.
ERNST BENARY, Erfurt, Germany.—Seeds.

COLOURED SUPPLEMENT: Clivia miniata.

THE GARDENERS' CHRONICLE

ESTABLISHED 1841

No 4462

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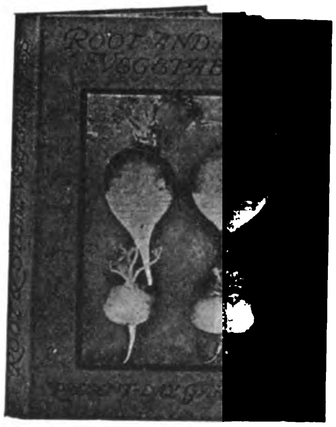

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Annual Exhibition, Dresden, 1926

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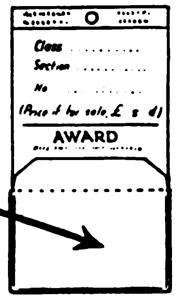

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NO business can succeed without advertising, which is its life-blood. A clogging of the physical arteries means death ; to cease to advertise is to kill one's business by slow starvation.

BY APPOINTMENT TO H.M. THE KING

KATAKILLA

The Popular Insecticide.

NON-POISONOUS

Harmless to Human Beings and Domestic Animals.

DEADLY TO APHIS AND CATERPILLARS
on
FRUIT, FLOWERS AND VEGETABLES

In Powder form, ready for mixing with water. Clean and easy to use.

"KATAKILLA" SPRAYING

Supplied in 2/- Cartons (to make 10 galls.) 6/- Cartons (to make 50 galls. wash).

OF ALL AGENTS.

Write for Illustrated Folder "Katakilla" Gratis and Post Free from—

COOPER, McDOUGALL & ROBERTSON, Ltd.
BERKHAMSTED, HERTS.

Make this into rich Manure

Lawn mowings, weeds, leaves, etc., should never be wasted. As your garden refuse accumulates, build it into a heap, treating each fresh addition of rubbish with—

ADCO

In a few months you will have a plentiful supply of rich organic fertiliser.
1 cwt. ADCO makes from 2-3 tons of MANURE according to the class of rubbish used.

ADCO ACCELERATOR
(for lawn mowings and soft green refuse)
28 lb., 4/6 ... 56 lb., 8/- ... 1 cwt., 15/-

STANDARD ADCO
(for all other rubbish, bracken and straw)
28 lb., 6/- ... 56 lb., 11/6 ... 1 cwt., 20/-
Carriage paid to nearest Goods Station. Cash with order.
Stocked by all leading Seedsmen, Harrods Ltd., etc.

ADCO LTD., 60 HARPENDEN HERTS.

THE LEADING GLASSHOUSE FUMIGANT

CORRY'S WHITE FLY DEATH

THOUSANDS OF TOMATO CROPS ENTIRELY SAVED.
No alterations needed since first introduced.
Be satisfied with the best, it is the cheapest in the end.
Commended by the Royal Horticultural Society.

Cubic ft.	1,000	2,000	4,000	8,000	16,000	32,000	64,000
	10d.	1/3	2/-	3/6	6/-	10/6	18/-

Also in 2, 5 and 10 gall. free drums.

ALSO

"NIQUAS"

THE INSECTICIDE.
CORRY'S (non-poisonous)
For destroying Greenfly, Aphis and Caterpillars etc., on all plants, trees and roses.
OVER 30 YEARS' REPUTATION.
Many hundreds of Testimonials received.
Equal to any, if not better, and cheaper, so why not use it and save money?

½-pt.	1 pt.	1 qt.	½-gall.	1 gall.	2 gall.	5 gall.	10 gall.
1/-	1/6	2/6	4/-	7/6	15/-	25/-	45/-

CONCENTRATED QUASSIA EXTRACT

½-pt.	1 pt.	1 qt.	½-gall.	1 gall.	2 gall.	5 gall.	10 gall.
9d.	1/3	2/-	3/6	6/6	12/6	23/-	42/-

From Nurserymen and Seedsmen—
CORRY & Co. Ltd. Shad Thames, LONDON, S.E.1

BLACK & FLORY.
SLOUGH.

For Vigorous Orchids.

WATER
raised by simply turning a handle. The wonderful Boulton Water Elevator lifts a continuous stream of water from well of any depth.
Ask for Catalogue No. 756.
Boulton & Paul Ltd.
. . NORWICH . .

ORCHIDS

Clean, well grown and cheap; also Many Rare and Choice Varieties.
STOVE AND GREENHOUSE PLANTS OF ALL KINDS
Kindly send for Catalogue.
JAMES CYPHER & SONS,
Exotic Nurseries, CHELTENHAM.

FLAME FLOWER
(Tropæolum Speciosum)
Extra strong established pot plants of this loveliest of scarlet-flowered perennial climbers, ready for planting any time now. 1/- each, 6 for 5/-, 12 for 10/-, carr. paid for cash with order.
CLARENCE ELLIOTT LTD.
SIX HILLS NURSERY, STEVENAGE, HERTS.

SITUATIONS VACANT

Twenty words (or three lines, including headline), 4s., and 1s. for every succeeding eight words (or line or portion thereof). Fee for having replies addressed to this office, 1s. over and above the amount payable for all words appearing in the advertisement, including our own address.

Advertisers desiring their Advertisements repeated must give full particulars. Name and address alone are insufficient.

Gardeners writing to Advertisers of Vacant Situations are recommended to send them copies of testimonials only, retaining the originals. To part with original documents is to run a great risk of their being mislaid.

When addressing Box numbers, it is essential to give the initials or pseudonym as well as the correct number of the box.

MUNICIPAL AND PUBLIC.

WANDSWORTH BOROUGH COUNCIL.

THE Wandsworth Borough Council invite applications for the appointment of PARKS SUPERINTENDENT in the Borough Engineer's Department. Salary £117 10s. 0d. per annum, rising by annual increments of £10 to a maximum of £155 per annum, plus Civil Service bonus for the time being in force. (On the scale now in force the bonus on the minimum salary is £82 14s. 0d.). The Council will also provide free residence for the candidate appointed.

Applications will only be considered from candidates who are thoroughly qualified for this class of work, and preference will be given to those who have had experience in a similar capacity elsewhere.

Further particulars and conditions of appointment and forms of application may be obtained from the undersigned.

Applications, accompanied by copies only of not more than three testimonials, must be delivered to me not later than Saturday, the 10th July, 1926.

Personal canvassing will be a disqualification.

D. A. NICHOLL,
Town Clerk.

Council House,
East Hill,
Wandsworth, S.W.18
26th June, 1926.

ADVANCED TRAINING OF GARDENERS AT WISLEY.

THE ROYAL HORTICULTURAL SOCIETY is prepared to train at Wisley for two years (subject to satisfactory progress) two young GARDENERS (18 to 25 years of age) who have had three years' practical experience in good gardens—private or trade. An allowance of £85 a year will be made. The men appointed will be required to work in the garden and to attend a series of classes in which tuition will be free. Applicants will please address the DIRECTOR, R.H.S. Gardens, Wisley, Ripley, Surrey, giving full particulars as to experience and where obtained, with testimonials. Preference will be given to the sons of gardeners. Applications must be received by Saturday, July 10.

SOMERSET COUNTY COUNCIL.

COUNTY AGRICULTURAL COMMITTEE.

AGRICULTURAL INSTRUCTION SUB-COMMITTEE.

APPLICATIONS are invited for the appointment of a HEAD GARDENER and INSTRUCTOR at The Somerset Farm Institute.

Applicants must have had a wide experience of General horticulture and especially in the cultivation of fruit and vegetables for market. Experience of teaching is desirable.

Salary, £165 per annum.

The appointment will be a designated post under the Local Government and other Officers Superannuation Act, 1922, and the person appointed must pass a medical examination.

Applications must be made on a form obtainable at the address below and accompanied by copies of three recent testimonials. They must be delivered not later than 17th July, 1926, to THE PRINCIPAL, Somerset Farm Institute, Cannington, Bridgwater, Somerset.

MIDDLESEX EDUCATION COMMITTEE.

AGRICULTURAL EDUCATION SUB-COMMITTEE.

IMPROVER wanted immediately (17-18 years of age) for Denham Demonstration Station, Bucks., where trials of fruit, vegetables and manures are carried out. Some previous experience in gardening necessary. Wages £1 5s. 0d. a week. Apply by letter to the undersigned, giving age and full particulars of previous experience.

B. S. GOTT, M.A.,
Secretary

Education Offices.
40, Eccleston Square,
Westminster, S.W. 1

PRIVATE.

WANTED, experienced practical HEAD WORKING GARDENER of four, good grower, Carnations, etc. Thorough knowledge Inside and Out; highest references essential. State wages.—ESTATE OFFICE, Summers Place, Billingshurst, Sussex.

WANTED, near Tonbridge, end of July, WORKING GARDENER, HEAD, of four, one with son who would work in house and garden desired.—Write, P. H., Box 12, 5, Tavistock Street, Covent Garden, W.C.2.

HEAD WORKING GARDENER required, where under-gardener and boy are employed.—Apply, stating age, wages and references, to H. M. D., Box 17, 5, Tavistock Street, Covent Garden, W.C.2.

WANTED, HEAD WORKING GARDENER of three, another part time; must be well recommended, keen, active and intelligent; good rock garden and large collection flowering shrubs, etc., not much glass; midlands; good cottage, vegetables, 55/- a week.—N. M. H., Box 9, 5, Tavistock Street, Covent Garden, W.C.2.

WANTED, ORCHID GROWER for private collection.—Apply, N. S. A., Box 4, 5, Tavistock Street, Covent Garden, W.C.2.

WORKING GARDENER (by middle July), must have first-class up-to-date experience, used private service, married man preferred with son able to work in garden; cottage available (Frinton-on-Sea district).—State age and wages required, with full particulars, to B., c/o 57, Cottenham Road, Walthamstow, E.17.

WANTED, experienced WORKING GARDENER. Inside and Out, able to milk; wages £2 and cottage.—J. C., HARRISON, Holbeach, Lincs.

WANTED immediately, GARDENER experienced all branches except glass; groom-gardener kept; no cottage; highest references.—Apply, stating wages, age, experience, A. L. RYDON, The Thatched Cottage, Little Common, Sussex.

WANTED, end of August, SINGLE-HANDED GARDENER, with knowledge of poultry. Gardener-handyman also employed.—Apply, first, to W. S. GREEN, 136, Above Bar, Southampton.

WANTED immediately, experienced SINGLE-HANDED GARDENER, some glass, Epsom.—Apply, B. D. H., Box 16, 5, Tavistock Street, Covent Garden, W.C.2.

WANTED, SECOND GARDENER, single, take charge Inside, assist outside when required. Wages £2; accommodation near.—GARDENER, The Hollies, Boxmoor, Herts.

WANTED, SECOND GARDENER, fully experienced Carnations and Orchids, without bothy. Age, wages and references.—MILTON BODE, Cliffe House, Mapledurham, Oxon.

WANTED, SECOND GARDENER, one used to herbaceous borders; wages 35/-, cottage.——Apply, with particulars, ANDERSON, Dean House, Kilmeston, Alresford, Hants.

WANTED, UNDER-GARDENER, single, wages 20/-; also two strong LADS, single, wages 14/-. In all cases board, residence, laundry, etc. included.—Apply, giving particulars and references (copies), to A. W. WARREN, The Hostel, Trent College, Long Eaton, Notts.

WANTED, FOREMAN, Inside, good experience generally, including decorating; married; wages £2 2s. 0d., cottage and wood.—Apply, W. A. CLARKE, Inglewood, Hungerford.

WANTED, LEADING HAND, kitchen garden; single; 45/- per week, bothy, attendance, etc.—Write, with references, J. DINES, Downside, Leatherhead, Surrey.

WANTED, immediately, experienced FIRST and SECOND for pleasure ground, bothy, six in garden.—WINTER, The Gardens, Kingswood Court, Tadworth, Surrey.

EXPERIENCED MAN required for pleasure grounds; wages £2 per week and bothy; able to take duty.—H. E. TYNDALL, Tandridge Court Gardens, Oxted.

WANTED, young MAN for Inside and Out, able to take duty.—Please state wages with bothy, etc., to A. CAMERON, Bramham Park Gardens, Boston Spa, Yorks.

WANTED, young MAN, Inside and Out, 20 to 24; wages 34/- and bothy; state experience.—C. SIMS, Clewer Park, Windsor.

WANTED, JOURNEYMAN, chiefly for pleasure grounds, used to motor mower; state wage, with bothy; duty monthly.—Particulars to J. PARR, Serlby Gardens, Bawtry, Yorks.

WANTED, JOURNEYMAN, smart and strong, 18-20, Inside; state experience and wages required with bothy, duty 4/- extra.—W. LANGRIDGE, Ashfold Gardens, Handcross, Haywards Heath.

WANTED, experienced JOURNEYMAN for fruit and plant houses, help outside when required; particulars, age and wage required (no bothy).—HEAD GARDENER, Summers Place, Billingshurst, Sussex.

WANTED, SECOND JOURNEYMAN for the houses; wages 30/- per week, bothy, duty extra.—Full particulars to E. CLEMENT, Mabledon, Tonbridge.

WANTED, IMPROVER, Inside, to take duty, in a large place; head gardener's recommendation.—Apply, F. CAPP, Nostell Priory Gardens, Wakefield.

TRADE.

WANTED, WORKING FOREMAN, for small well-kept nursery, Toms., Cues., 'Mums and cut. Good wages to right man.—FLORA, Box 3, 5, Tavistock Street, Covent Garden, W.C.2.

FOREMAN (WORKING) for outside nursery, Bournemouth district, thorough knowledge of shrubs, Roses, alpines, hard-wooded and herbaceous plants essential. Good organiser and controller of men. Excellent prospects for right man.—Fullest particulars to S.W.G., Box 1, 5, Tavistock Street, Covent Garden, W.C.2.

WANTED, thoroughly experienced LANDSCAPE FOREMAN, must be able to give estimates and control men.—Apply, LANDSCAPE, Box 2, 5, Tavistock Street, Covent Garden, W.C.2.

WORKING LANDSCAPE FOREMAN required immediately, experienced all branches; state wages; send two testimonials.—Write, S. & G. PARIS, Ashtead, Surrey.

WANTED, a married MAN, thoroughly competent to deal with the propagation and cultivation of flowering plants, including Chrysanthemums for market; house provided; state experience and wages required; Chingford district.—Apply, C. E. C., Box 41, 5, Tavistock Street, Covent Garden, W.C.2.

WANTED, first-class FERN-GROWER for commercial purposes; one that must be highly recommended; for one of the largest wholesale and retail growers in Canada.—JOHN SMITH, c/o Miller & Sons, Lauder Avenue, Toronto, Canada

WANTED, energetic young MAN with a good knowledge of indoor plants and execution of orders; age, experience and wages to DICKSON'S NURSERIES, LTD., Chester.

WANTED, young MAN to work under foreman, with some experience of Tomatoes Chrys., Carnations and Bedding stuff.—Apply, with references and wages, JAMES PAINE, Harold Nurseries, Clive Vale, Hastings.

TWO gentlemen PUPILS wanted for market garden; training on up-to-date commercial lines, all branches; premium required.—Box 10, Ashtead, Surrey.

WANTED, SHOP MANAGER for retail seed and nursery business in country town. Commence duties August. First-class experience and good business ability essential.—Apply, stating age, exprience and salary required, H. Y., Box 8, 5, Tavistock Street, Covent Garden, W.C.2.

HEAD SHOPMAN required, must have a good knowledge of all seeds, bulbs, sundries, etc., and be capable of making good displays both in the window and shop. A large and high-class trade is done, and applications are invited only from thoroughly capable and experienced men. A good salary is available for the right man.—Apply, stating age, if married, references and salary required, to H. S., Box 50, 5, Tavistock Street, Covent Garden, W.C.2.

GARDENER wanted, must have had good experience in floral decorating and furnishing in hotel work.—Write, with copies of references and experience, to G. Q., c/o 6, Bloomsbury Street, W.C.1.

SITUATIONS WANTED

Twenty words **2s.,** *and* **6d.** *for every succeeding eight words or portion thereof. (Advertisements at this special rate are only accepted direct from gardeners and nursery employees). Fee for having replies addressed to this office,* **1s.** *over and above the amount payable for* **all** *words appearing in the advertisement, including* **our own address.**

SUGGESTIONS FOR ADVERTISERS.

Before writing an advertisement, it is useful to look down the column and note the information contained in advertisements similar in character to your own. Important points which might otherwise escape the memory, may thus be brought to mind.

Write the advertisement in the centre of a large piece of paper (for example, a whole sheet of writing paper laid out flat) leaving plenty of space at top and bottom. If the name and address are to be included in the advertisement, place them at the end; if a box number is to be used, leave a generous space at the end of the advertisement, draw a line across the paper, and place the full name and address beneath the line.

No letter, or request for insertion is required; but in case of any doubt as to the proper classification the name of the section (such as "Situations Wanted, Trade") can be placed at the head of the advertisement. Such words will not be printed, or charged for.

It is important to send the correct amount in payment, as any variation causes delay (see rates at the head of each section).

No acknowledgment or receipt is sent in connection with these advertisements, but if an extra 7d. is added to the correct amount, a copy of the paper containing the advertisement will be sent post free.

An advertisement received after Tuesday may not, or if received after Wednesday cannot, be inserted the same week: but if fully paid, it will appear the following week, unless countermanded in the meantime.

PRIVATE.

GARDENER, HEAD of two or more, seeks situation, life experience all departments, excellent references; married, no family.—H. HARVEY, High Trees, Chalfont-St.-Peter, Bucks.

GARDENER, HEAD, life experience all branches; excellent references; no family; disengaged July 17th; please state wages with cottage.—W. H. CHAPMAN, The Gardens, Hilfield, Yateley, Camberley.

GARDENER, HEAD (Scotsman), highly recommended by present employer, Lady Kathleen Curzon Herrick; keen and interested.—Beau Manor Gardens, Wood House, Loughborough.

GARDENER, HEAD.—Gentleman recommends practical man with life experience, where several others are kept; 5 years in present situation, 10 previous.—F. PITMAN, Purley, Reading.

GARDENER, HEAD, or FOREMAN in good establishment; 20 years' practical experience in all departments; keen and enthusiastic; English; married, age 36; reliable services for reasonable remuneration; highly recommended.—SCOREY, Llangattock Park Gardens, Crickhowell, Breconshire.

HEAD GARDENER, WORKING, where two or three are kept; life experience in all branches gained in good establishments; married, excellent references.—C. COOMBER, 102, Silverdale Avenue, Westcliff-on-Sea.

HEAD GARDENER, WORKING, 26 years' thorough practical experience fruit, flowers and vegetables, Inside and Out; excellent testimonials; married, one boy aged twelve; abstainer.—W. CURTIS, Battenhall Mount Gardens, Worcester.

HEAD WORKING GARDENER requires situation; life experience Inside and Out; excellent references; married, aged 30.—ACKFORD, Chearsley, Aylesbury, Bucks.

HEAD WORKING GARDENER, life experience gained in good establishments, Inside and Out, 4 years present; age 40, 2 children, youngest 11; excellent references.—BEALE, 39, Rowland Grove, Sydenham.

E. GRAHAM SIMPSON, Esq., recommends his HEAD GARDENER, WORKING, experienced all branches, excellent references; age 37, abstainer.—A. SEABROOK, c/o Datchelor, Cooks Cottages, Wigginton, Tring, Herts.

GARDENER, HEAD WORKING, of two or more, life experience all branches, Inside and Out; middle age, no family, good reference; 7 years present place and leaving at own wish.—G. ANSELL, Mortimer House Gardens, Mortimer, Reading.

GARDENER, HEAD WORKING, where one or more are kept; practical experience, Inside and Out; good personal and experienced characters; 8 years last place, 8 previous; cottage; disengaged.—A. WOODBRIDGE, 111, New Road, Croxley Green, Herts.

GARDENER, HEAD WORKING, seeks situation; practical life experience all branches in good establishments, excellent references; age 41, married, no family.—EYRE, Maidwell Hall Gardens, Northampton.

GARDENER, HEAD WORKING, seeks engagement at Michaelmas or before. Good references and experience.—G. ROCKETT, The Gardens, Crowcombe Court, Taunton, Somerset.

GARDENER, HEAD WORKING, life experience all branches gained in good establishments, keen and interested; married, 2 children; age 37, good references.—FRIEND, Wexham Springs, Stoke Poges, Bucks.

GARDENER, HEAD WORKING, with good all-round experience, desires re-engagement; would undertake to run garden on commercial lines; 7 years in present situation; reason for change, estate sold.—W. H. F., Box 15, 5, Tavistock Street, Covent Garden, W.C.2.

GARDENER, HEAD WORKING, exceptional refs., sound practical knowledge all branches, of four or more; married, one child; state wages with cottage; south of England preferred.—G. M., Box 14, 5, Tavistock Street, Covent Garden, W.C.2.

HEAD WORKING GARDENER.—Thos. Beeson, head gardener to G. K. Weeks, Esq., Headley Park, Epsom, confidently recommends his foreman, A. LANGRIDGE, who has been with him 3½ years.—Apply, Headley Park Gardens, Epsom.

FUMIGATE YOUR PLANTS WITH

"G" Grade

the surest and most economical means for controlling all plant pests. Start with small dosages at frequent intervals, increasing the dosages towards the height of the season.

SPRINKLE IT—THAT'S ALL!

Write for particulars of the wonderful results obtained from CYANOGAS "GRANULAR," the most effective fumigant for controlling such soil pests as Wireworm, Leather-jackets, and Millipedes, under glass.

Write for personal advice and Handbook "The Glasshouse Fumigant" to:
THEODORE PARKER, Technical Adviser.

Geo Monro Ltd
SUNDRIES DEPARTMENT
WALTHAM CROSS HERTS.

Sole Distributors for
FUMIGATORS CHEMICALS LIMITED
233 Salisbury House, London, E.C. 2

WILLIS BROS.'
Universal Soluble Manure

FOR FRUIT AND PLANTS

Used in the Public Parks and Gardens for flower beds, etc. A scientific combination of all the valuable manurial agents best suited to plant life. The best Concentrated, All-round Manure in use.
1 cwt., 25/-; ½-cwt., 13/-; Carriage Paid.

SPECIAL CHRYSANTHEMUM MANURE.

We offer this as being the Best Manure in the Market for producing a robust plant, and flowers of great substance.
1 cwt., 30/- ½-cwt., 16/-; 28lb., 9/-; Carriage Paid.

ORDER YOUR HOSE NOW!!

Good Black Delivery Hose. ½in, ¾in. 1in.
3-ply ... ... 1/- 1/6 1/9 per foot.
Best Heavy Make Delivery Hose.
2-ply ... ... 1/- 1/4 2/- per foot.
Best Heavy Make Delivery Hose.
3-ply ... ... 1/3 1/9 2/- per foot.
Electric Corrugated Hose (Double Fabric) same price as Delivery.

WASP-PROOF NETTING.

Medium: 36ins., 1/-; 54ins., 1/6; 72ins., 2/- per yard.
Stout: 36ins., 1/6; 54ins., 2/3; 72ins., 3/- per yard.

GREENHOUSE BLINDS.

Made up to any size from special quality white shading material. Bound all round and down centre for strength with stout webbing, ready to fix: or complete with Rollers and Fittings at small extra cost.
Estimates and Samples on application.

GARDEN SUPPLIES AT LOWEST PRICES.

Write for our list of Garden Manures and Horticultural Sundries. Free on application.

WILLIS Bros. (HARPENDEN) Ltd.
HARPENDEN, HERTS.

KATAKILLA

The Popular Insecticide.

NON-POISONOUS

Harmless to Human Beings and Animals.

DEADLY TO APHIS AND CATERPILLARS on FRUIT, FLOWERS AND VEGETABLES.

In powder form, ready for mixing with water.

Clean and easy to use.

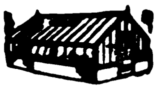
Supplied in 2/- cartons (for 10 gallons) 6/- cartons (to make 50 gallons)

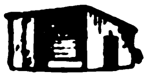
Of all agents.

Write for illustrated leaflet "Katakilla"; gratis and post free, from

COOPER, McDOUGALL & ROBERTSON, Ltd.
Berkhamsted.

ILLUSTRATED LIST POST FREE.


Greenhouses from £8 10 9


Poultry Houses from £1 12 9

Huts from £3 12 6

Bungalows, Garages, Rustic Houses of every description.
T. BATH & CO., Ltd., Savoy St., London, W.C.

Largest Manufacturers of Flower Pots in the World.

By Appointment

THE BEST AND CHEAPEST.

SPECIAL POTS for Roses, Vines, Clematis, Orchids, and Chrysanthemums.

Fancy Fern Pans and Bulb Bowls, from 3d. each.

No Waiting! All Orders executed the same day as received.

SANKEY'S FAMOUS GARDEN POTS

State quantity of each size required and have Carriage Paid quotation, or write for Illustrated Price List.

RICHARD SANKEY & SON, LTD.
Royal Potteries,
BULWELL, NOTTINGHAM.

ORCHIDS.

THE LARGEST RAISERS GROWERS & EXPORTERS

CHARLESWORTH & CO., LTD.,
HAYWARDS HEATH, SUSSEX.

NETTINGS

GARDEN NETS.—For Fruit Protection. Any lengths and widths. Corded all round.

New.—1 in. sq. mesh, heavy, 6½d. sq. yard
New.—1 in sq. „ medium, 5½d. „
New.—¾ in. sq. „ light, 5½d. „
New.—⅝ in. sq „ medium, 7½d. „
Repaired.—1 in. sq. mesh, 3½d. „
Repaired.—¾ in sq. „ heavy 4d. „
Repaired.—(not corded) 1 in. Diamond Mesh, 9/- per 100 square yards.

NEW TENNIS BOUNDARY NETS.

Any lengths and widths. Corded all round 7d. per square yard.

NEW TENNIS NETS.

Various qualities from 16/- to 31/- each.

NETS FOR ALL PURPOSES.

Samples and full particulars from the manufacturers.

JOSEPH BENTLEY LIMITED
BARROW-ON-HUMBER, Lincs.
(Sole Proprietors of B. Eddy & Sons.)

LOOK! TANNED GARDEN NETS

The ideal protection for seeds and buds against birds and frost.

25 yards x 1 yard, 2/-; 25 x 2, 4/-; 25 x 3, 6/- All carriage paid. Any sizes supplied. Also Tennis Boundary Nets. All orders despatched same day.

MOORE & Co., Net Works, RYE

NETTINGS

Carefully selected whole nets, ¾-inch diamond mesh.

25 yds. 13 yds., 37/6; 3 nets for £5 10 0
50 yds. 13 yds., 75/-; 3 nets for £11 2 0
75 yds. 13 yds., 112/6; 3 nets for £16 15 0
100 yds. 13 yds., 150/-; 3 nets for £22 5 0

Stock sizes, 50 × 4 yds., 25 × 8 yds., 100 × 2 yds., 25/- piece.

The above are a splendid lot of small-mesh nets which are used in the pilchard fishery on this coast, and can assure our customers they are the best nets obtainable.

New, stout, 1-in., square mesh nets, bound with cords, 5d. per square yard; medium ¾-in. 4½d., selected repaired ¾-in. 3d.; 1-in., 2½d. square yard.

NEW TENNIS BOUNDARY NETTING, steam tarred, square mesh, bound with cords, Heavy, 7d.; Medium, 6½d.; little Lighter, 4½d.; Selected Repaired, 3d. per square yard; all goods carriage paid, passenger train, receipt order.

Samples and particulars from the Manufacturers:

W. OLIVER ALLEN & SONS,
Net Makers, Porthleven, Cornwall.

MONROSE

BLIGHT AND MILDEW

SPECIFIC

Standard Preparation
for the control of:

APHIS AND MILDEW ON ROSES, Etc.

Prices: 6/- per ½-gallon
11/3 per gallon
9/6 per gallon in 5 gall. drums

If you cannot obtain supplies from your local Seedsman, write direct to Geo. Monro, Ltd.

For further technical information apply:
THEODORE PARKER, Technical Adviser.

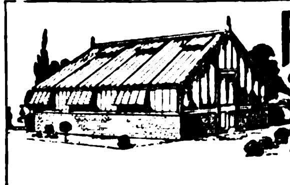
Geo Monro Ltd
SUNDRIES DEPARTMENT
WALTHAM CROSS HERTS.

"The Garden Beautiful"

No garden can be truly beautiful where the plants are sickly and starved. Therefore dress it well with Nitrate of Soda, in conjunction with Phosphates and Potash.

Write for special pamphlets, entitled, "Successful Gardens for Every Amateur," "The Manuring of Orchards and Fruit Trees," supplied gratis and post free by THE CHILEAN NITRATE COMMITTEE, Friars House, New Broad Street, London, E.C. 2.

Nitrate of Soda



PARSONS
Horticultural Builder.
21, Oxford Rd.
Reading.

Established 1823. Telephone: 1026 Addiscombe.

SOUTH LONDON HORTICULTURAL STORES
WOODSIDE, S.E. 25.

H. SCOTT & SONS

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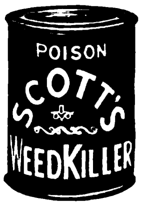

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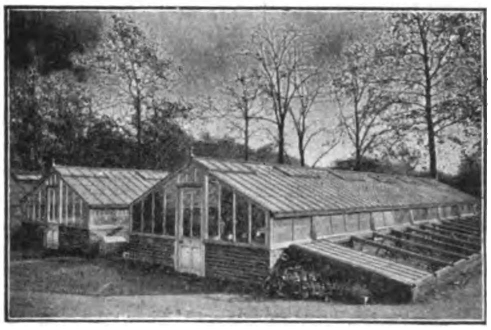

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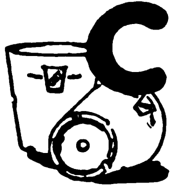

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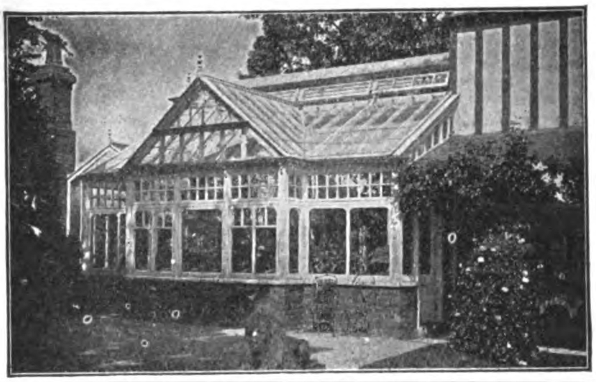

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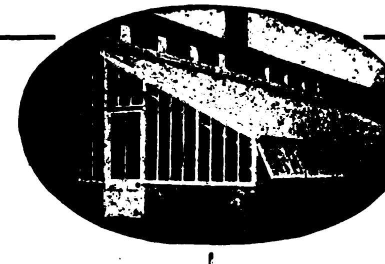

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TO YOU, TO ALL

—our Customers everywhere, at home and abroad ; to the Gardeners' Chronicle, which has carried our advertisement week by week for so long, its Editors, Management and Staff ; to everybody, everywhere, engaged in the profession of gardening, oldest and best of all, as essential as beautiful, as wonderful as good ; to everyone whose eye we may catch this week, regular reader or not—to all, most cordial and sincerest of good Wishes — to-day — always.

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Lilium Auratum.
Lilium longiflorum giganteum and varieties.
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ROSES, FRUIT TREES, HERBACEOUS PLANTS,
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HORTICULTURAL
DIRECTORY

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Garden Fertiliser

THE BEST ON THE MARKET.
NO STABLE MANURE REQUIRED.
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Supplied in two grades. Coarse, for New Borders. Fine, for renovating Old Borders.
1 cwt., 25/-; £24 per ton; Carriage Paid.
For New Vine Borders: to each cart-load of good fibrous loam, add ¼-cwt. Compound and one bushel Stick Charcoal, and mix thoroughly. For renovating Old Borders: remove as much as possible of the surface soil without damaging the roots, and mix ½-cwt. Vine Border Compound with each ton of good fibrous loam.

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Bags included, Carriage paid.

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For Vine Borders, Potting and General Horticultural Purposes.
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THE BEST AND CHEAPEST.

SPECIAL POTS for Roses, Vines, Clematis, Orchids, and Chrysanthemums.

Fancy Fern Pans and Bulb Bowls, from 3d. each.

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By J. Birkenhead

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THE KING'S SEEDSMEN,
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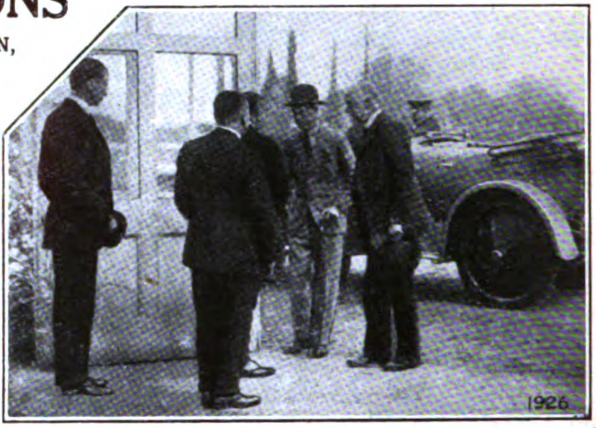
1926. H. R. H. The Prince of Wales at Sutton's Experimental Grounds, Reading.



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ABOLENE
Tar Oil
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Abolene is thoroughly reliable and efficient. Easy and safe to use. Supplied in small sizes to suit owners of only two or three trees.

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MAGNIFICENT SPECIMEN TREES
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FOR ANIMALS & PEOPLE
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No smell; kills the roots superior to arsenical compounds.
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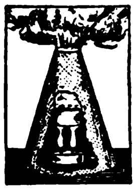
Certain destruction to all pests in glasshouses



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Improved 1924 Pattern. Patent applied for.

Made in 3 sizes
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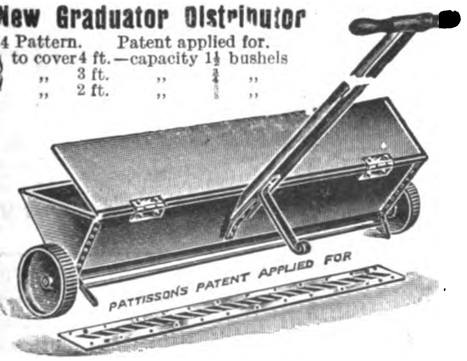

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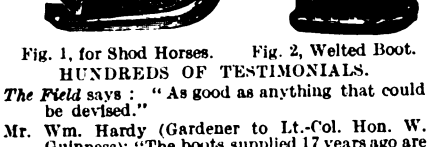

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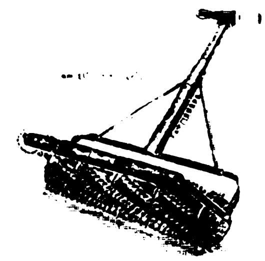

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per gall., drums free	
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This wash will destroy the eggs of Aphis, Psylla, Winter Moth, etc.

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144 Pages — 229 Illustrations.

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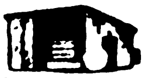

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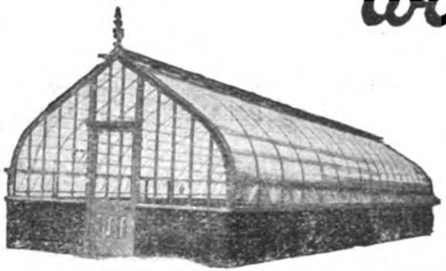

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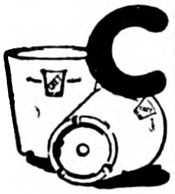

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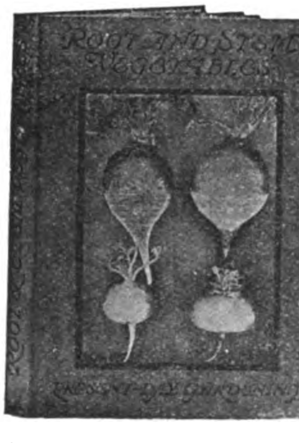

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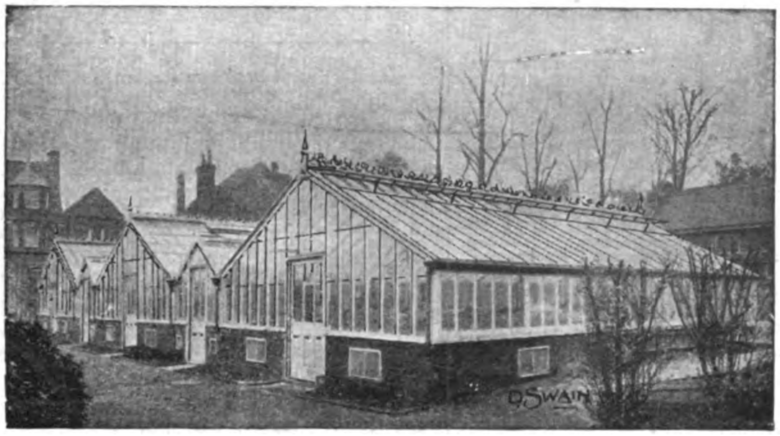

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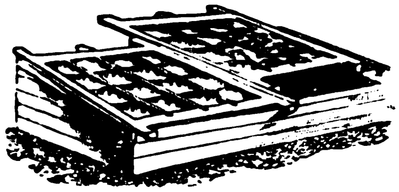

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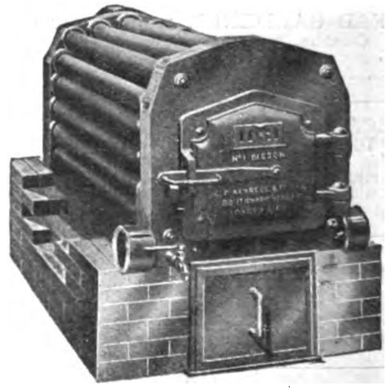

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